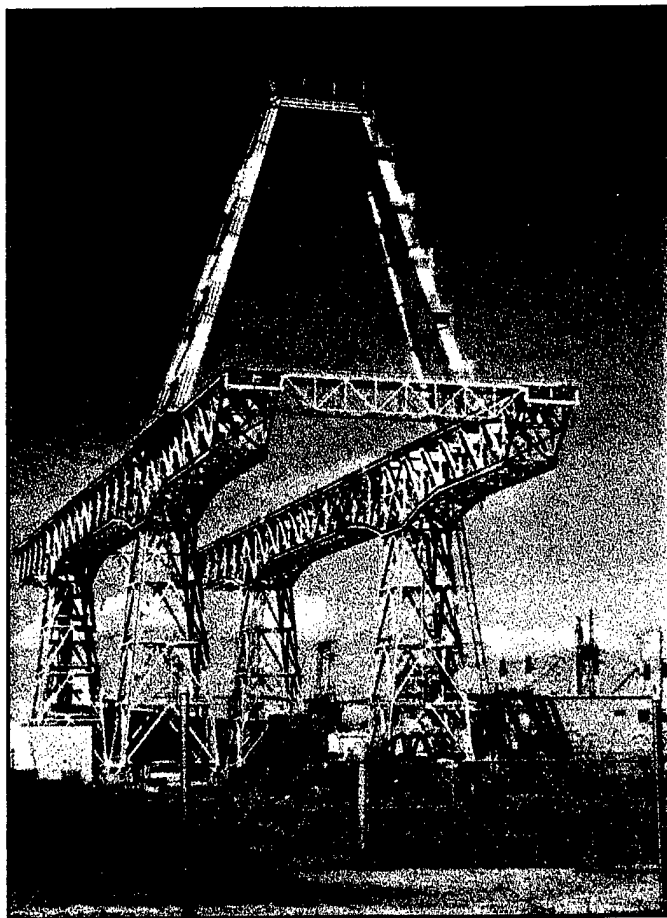


Revised Draft
Environmental Impact Statement/Environmental Impact Report
For the Disposal and Reuse of
Hunters Point Shipyard



October 1998

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Engineering Field Activity, West
Naval Facilities Engineering Command
City & County of San Francisco, Planning Department
San Francisco Redevelopment Agency

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DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B
703/EP-1600
November 3, 1998

**SUBJECT: PUBLIC HEARING AND REVISED DRAFT ENVIRONMENTAL
IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT
FOR THE DISPOSAL AND PROPOSED REUSE OF HUNTERS POINT
SHIPYARD, SAN FRANCISCO, CALIFORNIA**

Hunters Point Shipyard closed pursuant to the Defense Base Closure and Realignment Act, Public Law 101-510, as implemented by the 1993 base closure process. Under Section 2824 of Public Law 101-510, as amended, the Navy plans to convey the former Naval shipyard to the City of San Francisco for community reuse.

As part of this process, on November 14, 1997, the Department of the Navy and the City and County of San Francisco Planning Department (City)/San Francisco Redevelopment Agency (Agency) published a joint Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) to evaluate the potential for significant environmental effects of the Navy disposal and two proposed community reuse alternatives of the former Naval shipyard. The joint Draft EIS/EIR was prepared pursuant to Section 102 (2) (c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council of Environmental Quality regulations 40 CFR Parts 1500-1508, the California Environmental Quality Act (CEQA) Public Resources Code, Sec 21000 et seq., as amended.

Four public hearings were held, and substantial written comments were received by the end of the comment period on January 20, 1998. As a result of testimony received from the public, the Navy, City, and Agency have jointly determined that this Revised Draft EIS/EIR be prepared and circulated for public and agency review. Comments received on the November 14, 1997 Draft EIS/EIR have been considered during development of the revised text but have not been responded to individually. Those who commented on the prior review document are encouraged to review this Revised Draft EIS/EIR.

Two identical public hearings will be held for the purpose of receiving oral and written comments on the joint Revised Draft EIS/EIR. The first will be held on **Wednesday December 9, 1998 at 5:00 p.m. in Building 101 Auditorium at Hunters Point Shipyard, San Francisco**. The second hearing will be held at a joint meeting of the San Francisco Planning Commission and the San Francisco Redevelopment Agency Commission on **Thursday December 17, 1998 in Room 404, War Memorial Veterans' Building, 401 Van Ness Avenue, San Francisco, at 1:30 p.m. or later** (call 415-558-6422 the week of the hearing for a recorded message giving a more specific time). Any interested party may appear at a hearing and give testimony regarding the accuracy and completeness of the Revised Draft EIS/EIR.

The proposed Federal action discussed in the joint Revised Draft EIS/EIR is the disposal of Federal surplus property at the former Hunters Point Shipyard, San Francisco, California. The document also considers the potential significant impacts of two proposed community reuse alternatives of the property, the Proposed Reuse Plan Alternative, developed by the City and the Agency and the Reduced Development Alternative. The Proposed Reuse Plan or the Reduced Development alternative would be implemented by the Hunters Point Shipyard Redevelopment Plan. Both community alternatives emphasize mixed land uses of the site, including residential, industrial, maritime industrial, institutional, research and development, and open space. The document also evaluates a No Action alternative in which the Federal government would retain the property in caretaker status.

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Agencies, public groups and individuals are invited to submit written comments on the Revised Draft EIS/EIR during the 60-day review period, which ends on January 5, 1999. Written correspondence must be received no later than January 5, 1999, and should be addressed to either:

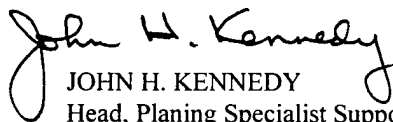
Engineering Field Activity West and/or
Naval Facilities Engineering Command
Attn: Mr. Gary Munekawa, Code 7032, Bldg 209/1
900 Commodore Drive
San Bruno, CA 94066-5006

City and County of San Francisco
San Francisco Planning Department
Attn: Ms. Hillary Gitelman
1660 Mission Street, Fifth Floor
San Francisco, CA 94103

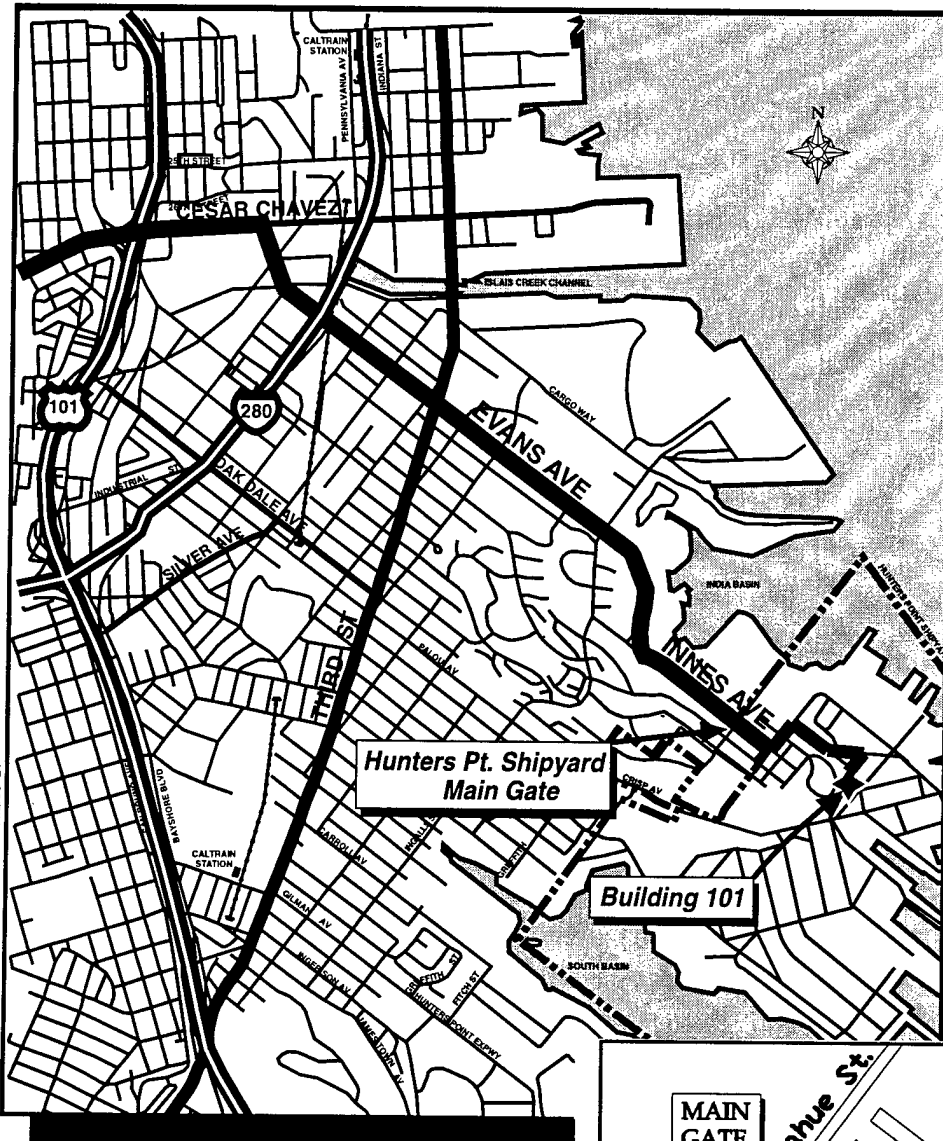
Copies of the Revised Draft EIS/EIR are being distributed to an extensive mailing list of agencies, organizations and individuals thought to have an interest in the proposed action, and a limited number of copies are available on request at the San Francisco Planning Department or from the Navy. The Revised Draft EIS/EIR is also available for review at the following locations in San Francisco:

San Francisco Planning Dept, 1660 Mission St., 1st Floor, Public Information Counter
San Francisco Main Public Library, Civic Center, Larkin & Grove Sts.
San Francisco Public Library, Anna E. Waden Branch, 5075 Third St.
San Francisco Redevelopment Agency, 770 Golden Gate Ave., 3rd Floor Reception Area

For further information concerning environmental review of the disposal and proposed reuse of the Hunters Point Shipyard, contact Mr. Gary Munekawa of the Department of the Navy at (650) 244-3022, FAX (650) 244-3206 or Ms. Hillary Gitelman of the San Francisco Planning Department at (415) 558-6381, FAX (415) 558-6426. For further information concerning the San Francisco Reuse Plan and process, contact Mr. Tom Conrad of the San Francisco Redevelopment Agency at (415) 749-2492, FAX (415) 749-2526. Thank you for your participation in this process.


JOHN H. KENNEDY
Head, Planing Specialist Support Team

Directions to Public Hearing at Hunters Point Shipyard, Building 101

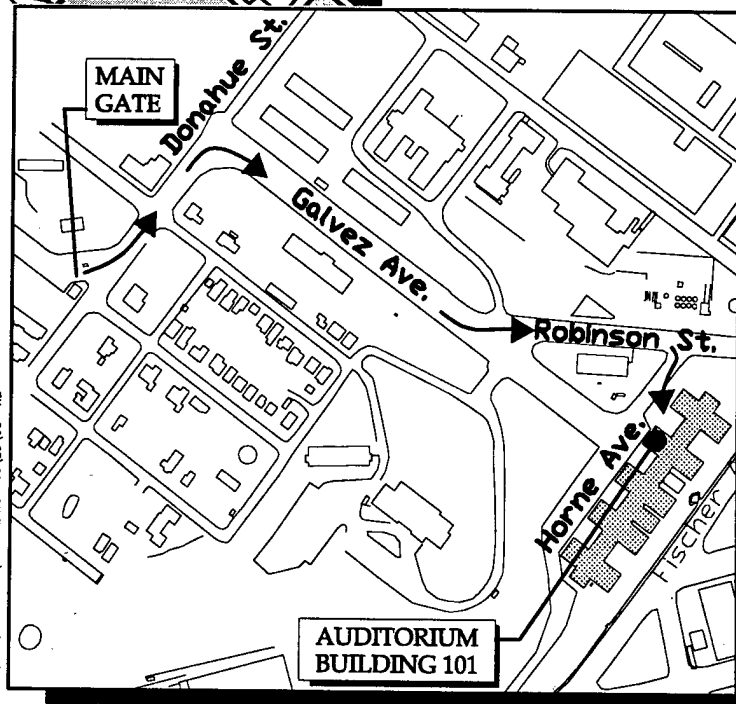


From 101,

Take Cesar Chavez east.

Turn right on Evans Avenue, which becomes Hunters Point Boulevard and then Innes Avenue.

Continue to Main Gate and then follow map below.



**REVISED DRAFT
ENVIRONMENTAL IMPACT STATEMENT/
ENVIRONMENTAL IMPACT REPORT
FOR THE DISPOSAL AND REUSE OF
HUNTERS POINT SHIPYARD
SAN FRANCISCO, CALIFORNIA**

Lead Agency for EIS:	U.S. Department of the Navy
Lead Agency for EIR:	City and County of San Francisco, California
Title for Proposed Action:	Navy Disposal and Reuse of Hunters Point Shipyard
Affected Jurisdictions:	City and County of San Francisco, California
Designation:	Environmental Impact Statement/Environmental Impact Report
State Clearinghouse #:	SCH# 95072085

ABSTRACT

Hunters Point Shipyard was closed pursuant to the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510), as implemented by the 1993 base closure process. Under § 2824 of Public Law 101-510, as amended, the Navy has authority to convey the property to the City of San Francisco (or a reuse organization approved by the City) for such consideration and under such terms as the Secretary of the Navy considers appropriate. This authority can be exercised exclusive of the specific Federal property disposal laws and regulations otherwise required for Navy disposals under the Base Realignment and Closure Act (BRAC) of 1988.

This joint *Revised* Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code § 4321 *et seq.*, and the California Environmental Quality Act (CEQA) statutes and guidelines, California Public Resources Code § 21000 *et seq.*, and analyzes the potentially significant environmental impacts of Navy disposal and community reuse of the former Hunters Point Shipyard. The Federal action evaluated in this *Revised* Draft EIS/EIR is the Navy disposal of Federal property and structures out of Federal ownership. The local action evaluated is the proposed reuse of the property, as implemented by the *Hunters Point Shipyard Redevelopment Plan* (adopted by the San Francisco Board of Supervisors on July 14, 1997).

This *Revised* Draft EIS/EIR evaluates two community reuse alternatives: the Proposed Reuse Plan and the Reduced Development Alternative. The No Action Alternative is also evaluated. This *Revised* Draft EIS/EIR presents analyses of potential significant environmental impacts relating to transportation, traffic, and circulation; air quality; noise; land use; visual resources and aesthetics; socioeconomics; hazardous materials and waste; geology and soils; water resources; utilities; public services; cultural resources; biological resources; and energy.

Both reuse alternatives could contribute to cumulative significant and unavoidable transportation and air quality impacts, which would be reduced, but not eliminated, by proposed mitigation measures. The Navy No Action Alternative would result in a significant and unavoidable impact on cultural resources. The mitigation measures identified in this *Revised* Draft EIS/EIR could reduce all other environmental impacts to acceptable levels.

Comments on this document should be sent to:

Engineering Field Activity, West
Naval Facilities Engineering Command -AND-
900 Commodore Drive
San Bruno, CA 94066-5006
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Cumulative Transportation Impact Analysis
Air Quality
Plant, Bird, and Animal Species at Hunters Point Shipyard
Technical Summary of Hunters Point Shipyard Real Estate Market Projections
(Sedway & Associates, 1995)

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Hunters Point Shipyard Redevelopment Plan
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ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AC Transit	Alameda - Contra Costa Counties Transit Authority
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos Containing Materials
Agency	San Francisco Redevelopment Agency
AHERA	Asbestos Hazard Emergency Response Act
AOC	Area of Concern
ARB	Air Resources Board
AST	Aboveground Storage Tank
ATC	Authority to Construct
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BBL	Barrels
BCDC	Bay Conservation and Development Commission
bgs	Below ground surface
BMP	Best management practice
BRAC	Base Realignment and Closure Act
BRIM	Base Reuse Implementation Manual
CAA	Clean Air Act
CAC	Citizens' Advisory Committee
CAL OSHA	California Occupational Safety and Health Act
Cal. Pub. Res. Code	California Public Resources Code
Cal/EPA	California Environmental Protection Agency
CalTrain	California Train
Caltrans	California Department of Transportation
CAP	Corrective Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCC	California Coastal Commission
C.C.R.	California Code of Regulations
CDF	Confined disposal facility
CDFG	California Department of Fish and Game
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Resource Compensation and Liability Act
CERFA	Community Environmental Resource Facility Act
C.F.R.	Code of Federal Regulations
CFU	Total coliform units
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
COE	Corps of Engineers
CRP	Community Relations Plan
CSO	Combined sewer overflow
CTBS	Citywide Travel Behavior Survey
CUPA	Certified Unified Program Agency

ABBREVIATIONS AND ACRONYMS

CWA	Clean Water Act
CZMA	Coastal Zone Management Act of 1972
dB	Decibel
dBA	A-weighted decibel scale
DBCRA	Defense Base Closure and Realignment Act of 1990
DDT	dichlorodiphenyltrichloroethane
°C	Degrees Celsius
°F	Degrees Fahrenheit
DERP	Defense Environmental Restoration Program
DMMO	Dredged Material Management Office
DNAPL	Dense non-aqueous phase liquid
DOD	Department of Defense
DOHS	Department of Health Services
DPE	Dual-phase extraction
DPH	Department of Public Health (San Francisco)
DPT	Department of Parking and Traffic (San Francisco)
DPW	Department of Public Works
DTSC	Department of Toxic Substances Control
DVT	Daily vehicle trips
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EFA West	Environmental Field Activity West
EIR	Environmental Impact Report
EIS	Environmental Impact Study
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Endangered Species Act
FAR	Floor-area ratio
Fed. Reg.	Federal Register
FFA	Federal Facilities Agreement
FOSL	Finding of Suitability to Lease
FOST	Finding of Suitability to Transfer
FS	Feasibility Study
ft ³	Cubic Feet
gpd	Gallons per day
ha	Hectare or Hectares
HAER	Historic American Engineering Record
HASP	Health and Safety Plan
HCM	Highway Capacity Manual
HHRA	Human Health Risk Assessment
HMMP	Hazardous Materials Management Plan
HMTA	Hazardous Materials Transport Act
HPS	Hunters Point Shipyard
H ₂ S	Hydrogen Sulfide
HSWA	Hazardous and Solid Waste Amendments
HUD	U.S. Department of Housing and Urban Development
HWCL	Hazardous Waste Control Law
HWMP	Hazardous Waste Management Plan
ICTF	Intermodal Container Transfer Facility

ABBREVIATIONS AND ACRONYMS

ICU	Intersection Capacity Utilization
IDW	Investigation Derived Wastes
IR	Installation Restoration
IRP	Installation Restoration Program
JAI	Jerrold Avenue Investigation
JPB	Joint Powers Board
kg	kilogram
km	Kilometer
kV	Kilovolt
kW	Kilowatt
kWh	Kilowatt-hour
lb	Pound
LBP	Lead-Based Paint
Ldn	Day-Night Average Sound Level
Leq	Hourly Equivalent Noise Levels
LIFO	Lease In Furtherance of Conveyance
LNAPL	Light non-aqueous phase liquid
LOS	Level of Service
LRA	Local Reuse Agency
LRT	Light Rail Transit
m	meter
Ma	Made Soils
Mb	Made Soils, Fine
MBL	Marine Bioassay Laboratories
MCL	Maximum Contaminant Limit
µg/l	Micrograms per liter
µg/m ³	Micrograms per cubic meter
mg/l	Milligrams per liter
mgd	Million gallons per day
ml	Milliliters
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MPH	Miles per hour
MSL	Mean Sea Level
MTC	Metropolitan Transportation Commission
MUNI	San Francisco Municipal Railway
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAHC	Native American Heritage Commission
Navy	U.S. Navy
NAWQC	National Ambient Water Quality Criteria
NCP	National Contingency Plan
NEPA	National Environmental Policy Act of 1969
NESHAP	National Emission Standards for Hazardous Air Pollutants
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NOI	Notice of Intent
NOP	Notice of Preparation

ABBREVIATIONS AND ACRONYMS

NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
NRDL	Naval Radiological Defense Laboratory
NRHP	National Register of Historic Places
NUAD	Not Suitable for Unconfined Aquatic Disposal
O&M	Operations and Maintenance
O ₃	Ozone
OHP	California Office of Historic Preservation
OPNAVINST	U.S. Navy Operational Naval Instructions
OSHA	Occupational Safety and Health Administration
PA	Preliminary Assessment
PA/SI	Preliminary Assessment/Site Inspection
PAC	Project Area Committee
PacBell	Pacific Bell
PAH	Polynuclear Aromatic Hydrocarbon
Pb	Lead
PCB	Polychlorinated Biphenyl
PCE	Perchloroethylene
PG&E	Pacific Gas and Electric
PM ₁₀	Airborne particulate matter 10 microns or less in diameter
PM _{2.5}	Airborne particulate matter 2.5 microns or less in diameter
POTW	Publicly Owned Treatment Works
PPC	Pollution Prevention Coordinator
PPE	Personal Protective Equipment
ppm	Parts per million
PRG	Preliminary Remediation Goal
psig	Pounds per inch gauge
PTO	Permit to Operate
Pub. L.	Public Law
PUC	Public Utilities Commission
PVC	Polyvinyl Chloride
PWC	Naval Public Works Center, San Francisco
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
QERA	Qualitative ecological risk assessment
RA	Remedial Action
Ra-226	Radium-226
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
ROI	Region of Influence
RTIP	Regional Transportation Improvement Program
RTP	Regional Transportation Plan

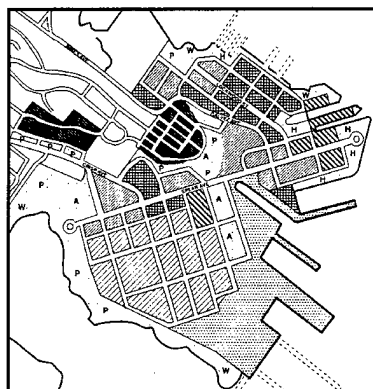
ABBREVIATIONS AND ACRONYMS

RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit District
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCS	U.S. Soil Conservation Service
SDWA	Safe Drinking Water Act of 1974
SEWPCP	Southeast Water Pollution Control Plant
SFFD	San Francisco Fire Department
SFPD	San Francisco Police Department
SFUSD	San Francisco Unified School District
SFWD	San Francisco Water Department
SHPO	State Historic Preservation Officer
SI	Site Inspection
SIP	State Implementation Plan
SLC	State Lands Commission
SO₂	Sulfur dioxide
SOP	Standard Operating Procedure
SOx	Sulfur Oxides
SP	Southern Pacific Transportation Company
SPCC	Spill Prevention, Control, and Countermeasure
S/S	Solidification and Stabilization
SUAD	Suitable for Unconfined Aquatic Disposal
SVE	Soil Vapor Extraction
SVOCs	Semi-Volatile Organic Compounds
SWAT	Special Weapons and Tactics
SWDA	Solid Water Disposal Act
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAZ	Travel Analysis Zone
TCE	Trichloroethylene or Trichloroethene
TD	Thermal desorption
TDM	Transportation Demand Management
TMA	Transportation Management Association
TOC	Total Organic Carbon
TOG	Total Oil and Grease
TPH	Total Petroleum Hydrocarbons
TRC	Technical Review Committee
TSCA	Toxic Substances Control Act
TSI	Thermal System Insulation
TSMP	Transportation System Management Plan
TSS	Total Suspended Solids
U.S. EPA	U.S. Environmental Protection Agency
UCSF	University of California at San Francisco
U.S.	United States
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

ABBREVIATIONS AND ACRONYMS

USNRDL	U.S. Naval Radiological Defense Laboratory
UST	Underground Storage Tank
v/c	volume-to-capacity ratio
VMT	Vehicle miles traveled
VOC	Volatile Organic Compound
WG	Water Gauge

Executive Summary



EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

PURPOSE AND NEED FOR ACTION

Hunters Point Shipyard (HPS) is located in the South Bayshore planning area of the City and County of San Francisco (City), within an area also known as the Bayview-Hunters Point neighborhood. HPS occupies approximately 936 acres (379 hectares [ha]), of which approximately 493 acres (200 ha) are dry land and approximately 443 acres (179 ha) are under water (U.S. Navy, 1994a). The U.S. Navy bought the HPS property in 1939 and took possession of it in 1941. The property was designated a U.S. Naval Shipyard in 1945, providing logistics support, construction, and maintenance for Navy ships. The shipyard was shut down in 1974. Since 1976, the Navy has leased some of the facilities on the property. In 1994, the site was transferred to Naval Facilities Engineering Command, Engineering Field Activity West (EFA West).

The Department of Defense (DOD) has reduced the number of its bases in recent years under the Defense Base Closure and Realignment Act (DBCRA) of 1990 (Public Law [Pub. L.] 101-510.) Under 1991 and 1993 DBCRA legislation, HPS was designated for closure by the Navy and potential reuse by the community.

Under Section 2824 of Pub. L. 101-510, as amended, the Navy has authority to convey HPS to the City (or a local redevelopment authority approved by the City) for such consideration and under such terms as the Secretary of the Navy considers appropriate. The Navy's authority can be exercised exclusive of the specific Federal property disposal laws and regulations otherwise required for Navy disposals under the Base Realignment and Closure Act (BRAC) of 1988.

This Environmental Impact Statement/Environmental Impact Report (EIS/EIR) is intended to fulfill the requirements of the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) § 4321 *et seq.*, and the California Environmental Quality Act (CEQA), California Public Resources Code § 21000 *et seq.*, to assess the potential significant environmental consequences of Navy disposal and possible community reuse of the HPS property. The Navy will use this EIS/EIR in its consideration of Navy disposal options in its NEPA Record of Decision (ROD). The City and the San Francisco Redevelopment Agency (Agency) will use this document to meet the environmental analysis requirements of the proposed project under CEQA. The Navy is the lead agency for the document under NEPA; the City (Planning Department) and the Agency are the joint lead agencies under CEQA.

This document assesses the potential significant environmental impacts of the disposal of HPS by the Navy and the implementation by the City and Agency of the Proposed Reuse Plan, which would be implemented through the *Hunters Point Shipyard Redevelopment Plan*, adopted as City Ordinance 285-97 on July 14, 1997. This Reuse Plan is analyzed, along with alternatives to the Proposed Reuse Plan, at a general or programmatic level (State CEQA Guidelines § 15180 [a] & [b]).

ALTERNATIVES

Four alternatives are considered in this EIS/EIR: Navy disposal of HPS, the City's Proposed Reuse Plan, the City's Reduced Development Alternative, and the No Action Alternative. The Navy disposal process is considered as a component of each of the community reuse alternatives. Direct impacts of reuse are the indirect impacts of disposal.

Navy Disposal

The Federal action is the transfer of title (Navy disposal) of HPS from Federal ownership.

City of San Francisco Proposed Reuse Plan

The Proposed Reuse Plan for HPS includes a mix of land uses. These uses include industrial, maritime industrial, research and development, educational and cultural, institutional, residential, mixed use, and open space. These uses could create approximately 6,400 jobs by 2025. The Proposed Reuse Plan would be implemented through the *Hunters Point Shipyard Redevelopment Plan*. Reuse may occur after remediation and deed conveyance of property, or reuse may occur concurrently with remediation in accordance with a Lease in Furtherance of Conveyance (LIFOC) or an "early transfer," with deferral of the deed covenant required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 120(h)(3).

City of San Francisco Reduced Development Alternative

The Reduced Development Alternative includes a mix of land uses similar to those in the Proposed Reuse Plan but at a reduced level of development. These uses could create approximately 2,700 jobs by 2025.

No Action Alternative

HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could possibly continue existing leases.

AFFECTED ENVIRONMENT

Effects on natural and community resources have been assessed, including transportation, traffic, and circulation; air quality; noise;

land use; visual resources and aesthetics; socioeconomics; hazardous materials and waste; geology and soils; water resources; utilities; public services; cultural resources; biological resources; and energy. The existing conditions of these resources at HPS and in the surrounding region of influence are described in Chapter 3.

ENVIRONMENTAL CONSEQUENCES AND MITIGATION MEASURES

The potential significant environmental impacts associated with the Navy's disposal and the City's reuse of HPS are presented in Chapter 4. The impacts of the City's Proposed Reuse Plan and the Reduced Development Alternative are considered for two phases of development: partial build-out in 2010 and full build-out in 2025. Impacts are assessed for two scenarios: (1) the Navy's remediation of contamination at HPS is complete at project build-out or full implementation of the project prior to reuse, and (2) remediation of contaminants and reuse occur simultaneously. In accordance with the requirements of CEQA, this chapter also presents the measures that could mitigate potential significant environmental impacts. Table ES-1 provides a summary of the impacts identified and their potential level of significance for each resource area.

Navy Disposal Alternative

Navy disposal is a transfer of title. Only one impact was identified as resulting solely from Federal disposal of HPS property, a potential significant impact on cultural resources. This impact could be reduced to a less than significant level by mitigation measures included in this analysis. In addition, indirect impacts would be the direct impacts of reuse, described below.

City of San Francisco Reuse Alternatives

Implementation of the Reuse Plan would bring new employees and residents to the site and would generally increase the level of activity on and around HPS. Physical improvements to area facilities would be implemented, along with operational changes intended to further the City's goals of redevelopment. The land use changes, capital improvements, and operational changes proposed would result in potential significant impacts on transportation, traffic, and circulation; air quality; noise; hazardous materials and waste; geology and soils; water resources; utilities; cultural resources; and biological resources.

The majority of these potential impacts, some of which could be significant, would be mitigated through measures already included in the Proposed Reuse Plan or required by law and described herein. Also, some potentially significant impacts would be reduced to a level of non-significance by specific mitigation measures that are proposed for implementation or recommended by this analysis. Both reuse alternatives could contribute to cumulative significant and unavoidable transportation and air quality impacts, which could be

reduced, but not eliminated by proposed mitigation measures. The Reduced Development Alternative would involve less intensive use than the Reuse Plan alternative and therefore would generally have reduced impacts and benefits.

No Action Alternative

Only one impact was identified for this alternative, a significant impact on cultural resources. The deterioration of historic property is considered an unavoidable impact under this alternative. The Navy would seek agreement from the State Historic Preservation Officer and the Advisory Council on Historic Preservation to accept the loss of the significant historic properties.

UNRESOLVED ISSUES AND AREAS OF CONTROVERSY (CEQA)

Closure and reuse of military facilities has become common since the enactment of DBCRA, and this process is frequently the subject of intensive community involvement. As explained in this *Revised Draft EIS/EIR*, issues of community concern regarding the closure and reuse of HPS include the presence and removal of hazardous materials, transportation access to the facility, and sewer, storm water, and water quality issues.

Substantial public comments on these and other issues were received in response to the Draft EIS/EIR published in November 1997. As a result, the Navy, City, and Agency have jointly decided that a *Revised Draft EIS/EIR* be prepared and circulated for public and agency review. Comments received on the November 1997 draft have been considered during development of the revised text but have not been responded to individually. Additional information and analysis have become available and are reflected herein. No lessening of controversy is expected, however.

TABLE ES-1: SUMMARY OF IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Transportation, Traffic, and Circulation (Section 4.1)				
Increased cumulative traffic at Third Street/Cesar Chavez Street intersection	○	○	●	●
Increased cumulative traffic on U.S. 101 and I-280 freeway segments	○	○	●	●
Increased cumulative traffic at Third Street/Evans Avenue intersection	○	○	◐	◐
Increased cumulative traffic at Evans Avenue/ Cesar Chavez Street intersection	○	○	◐	◐
Unmet demand for public transportation	○	○	◐	◐
Unmet demand for pedestrian and bicycle facilities	○	○	◐	◐
Increased traffic at other intersections	○	○	◐	◐
Increased traffic on freeways and ramps	○	○	◐	◐
Increased truck traffic	○	○	◐	◐
Air Quality (Section 4.2)				
Ozone precursor emissions from increased traffic	○	○	●	●
PM ₁₀ emissions from increased traffic	○	○	●	●
Toxic air contaminants from stationary, mobile, and cumulative sources	○	○	●	●
Airborne dust from construction and demolition	○	○	◐	◐
Carbon monoxide emissions from increased traffic congestion	○	○	◐	◐
Consistency with BAAQMD Air Quality Plan and the City Air Quality Element	○	○	◐	◐
Federal Clean Air Act conformity requirements	○	○	○	○
Noise (Section 4.3)				
On-site traffic noise (east of Donahue Street)	○	○	◐	◐
On-site traffic noise (west of Donahue Street)	○	○	◐	◐
On-site traffic noise (Lockwood Avenue)	○	○	◐	◐
Off-site traffic noise	○	○	◐	◐
Noise associated with construction and demolition	○	○	◐	◐
Noise/land use compatibility conflicts	○	○	◐	◐

TABLE ES-1: SUMMARY OF IMPACTS (CONTINUED)

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Land Use (Section 4.4)				
Alteration of present land use	○	○	⊖	⊖
Juxtaposition of planned and existing land uses	○	○	⊖	⊖
Juxtaposition of HPS uses and adjacent areas	○	○	⊖	⊖
Provision of public open space	○	○	⊖	⊖
Consistency with plans and policies	○	○	○	○
Visual Resources and Aesthetics (Section 4.5)				
Increased development	○	○	⊖	⊖
Increased hill area density	○	○	⊖	⊖
Increased intensity of use	○	○	⊖	⊖
Socioeconomics (Section 4.6)				
Population	○	○	⊖	⊖
Housing	○	○	⊖	⊖
Employment	○	○	⊖	⊖
Schools	○	○	⊖	⊖
Hazardous Materials and Waste (Section 4.7)				
Human exposure to unremediated areas during routine use (prior to complete remediation)	○	○	● ¹	● ¹
Human exposure to contamination during construction activities (prior to complete remediation)	○	○	● ¹	● ¹
Human exposure to contamination during remediation activities	○	○	⊖	⊖
Ecological exposure to contamination during remediation activities	○	○	⊖	⊖
Human exposure to residual chemical constituents during routine use (after remediation)	○	○	● ¹	● ¹
Human exposure to residual chemical constituents during construction activities (after remediation)	○	○	●	●
Human exposure to previously unidentified subsurface hazards (after remediation)	○	○	● ¹	● ¹
Ecological exposure to residual chemical constituents during construction activities (after remediation)	○	○	●	●
Cross-contamination among water-bearing zones	○	○	●	●
Hazardous materials usage and generation	○	○	⊖	⊖

TABLE ES-1: SUMMARY OF IMPACTS (CONTINUED)

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Hazardous Materials and Waste (Continued)				
Hazardous materials management	○	○	⊖	⊖
Building renovation and demolition: ACM	○	○	⊖	⊖
Building renovation and demolition: PCBs	○	○	⊖	⊖
Building renovation and demolition: LBP	○	○	⊖	⊖
Geology and Soils (Section 4.8)				
Naturally occurring asbestos	○	○	●	●
Seismic hazards associated with older buildings	○	○	●	●
Seismic hazards associated with newer buildings	○	○	⊖	⊖
Erosion	○	○	⊖	⊖
Landsliding	○	○	⊖	⊖
Water Resources (Section 4.9)				
Discharges of treated combined sewer overflows	○	○	●	●
Discharges of storm water	○	○	●	●
Discharges of municipal wastewater effluent (dry-weather flows)	○	○	⊖	⊖
Introduction of pollutants to groundwater	○	○	⊖	⊖
Utilities (Section 4.10)				
Potable water supply and distribution system	○	○	●	●
Fire protection/saltwater supply systems	○	○	●	●
Storm water collection system	○	○	●	●
Sanitary collection system	○	○	●	●
Natural gas system	○	○	●	●
Electrical system	○	○	⊖	⊖
Telephone service	○	○	⊖	⊖
Solid waste disposal	○	○	⊖	⊖
Public Services (Section 4.11)				
Police services	○	○	⊖	⊖
Fire protection services	○	○	⊖	⊖
Emergency medical services	○	○	⊖	⊖

TABLE ES-1: SUMMARY OF IMPACTS (CONTINUED)

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Cultural Resources (Section 4.12)				
Transfer of property out of Federal ownership—historic resources	●	○	○	○
Alteration or demolition of historic resources	○	○	●	●
Incompatible new construction	○	○	●	●
Loss of unidentified archeological resources	○	○	●	●
Deterioration of historic property	○	●	⊖	⊖
Biological Resources (Section 4.13)				
Increased human activity near sensitive habitats	○	○	●	●
Increased litter	○	○	●	●
Increased runoff into sensitive habitats	○	○	⊖	⊖
Additional waterfowl and shorebird habitats	○	○	⊖	⊖
Threatened or endangered avian species	○	○	⊖	⊖
Threatened or endangered fish species	○	○	⊖	⊖
Nonlisted sensitive species and common wildlife	○	○	○	○
Energy (Section 4.14)				
Energy use	N/A ²	N/A ²	○	○

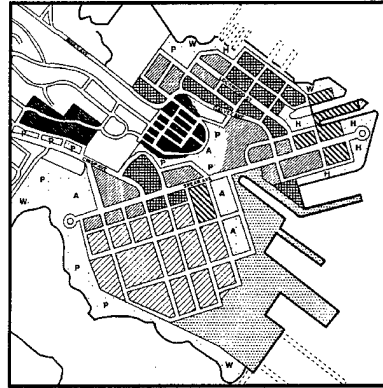
Legend:

- Significant Impact, Unmitigable ●
 Significant Impact, Mitigable ●
 Less Than Significant Impact ⊖
 No Impact ○

¹ Denotes that the impact is significant and mitigable for CEQA purposes. For NEPA purposes, the impact is less than significant, because existing regulations require protective measures.

² Energy consumption is a CEQA-only requirement in accordance with the state CEQA Guidelines, 14 C.C.R., Chapter 3 § 15000 *et seq.*

1 Purpose and Need for Document



CHAPTER 1: PURPOSE AND NEED
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1. PURPOSE AND NEED

This Environmental Impact Statement/Environmental Impact Report (EIS/EIR) evaluates the potential significant impacts to the natural and human environment that may result from the disposal of Hunters Point Shipyard (HPS) from Federal ownership and subsequent reuse of the property by the City and County of San Francisco (hereafter referred to as the City). HPS was selected for closure pursuant to the Base Realignment and Closure Act (BRAC) of 1988, Pub. L. 100-526, and Defense Base Closure and Realignment Act (DBCRA) of 1990, Pub. L. 101-510; 10 United States Code (U.S.C.) § 2687, as amended, 1991 and 1993. HPS is proposed for disposal pursuant to the Military Construction Authorization Act, Public Law (Pub. L.) 103-160, 10 U.S.C. § 2834.

The Federal action subject to the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. § 4321 *et seq.*, is the Navy's disposal of HPS to facilitate economic redevelopment. The local action evaluated is the City's potential reuse of HPS. Local reuse of HPS may occur either after remediation and deed transfer of property or may occur concurrently with remediation as interim reuse in accordance with the terms of a Lease in Furtherance of Conveyance (LIFOC). Local reuse of HPS property may also occur prior to the completion of remediation in accordance with a title transfer pursuant to the provisions of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 120, as amended by § 334 of the Fiscal Year 1997 Defense Authorization Act (referred to as a § 334 early transfer). These provisions allow for the deferral of CERCLA deed covenant requirements under certain circumstances.

1.1 PURPOSE AND NEED FOR ACTION

For the past several years, the Department of Defense (DOD) has gone through a process of reducing the number of its bases. The decision to transfer HPS out of Federal ownership is a result of that base closure process. Legislation included as part of the Defense Authorization Act for Fiscal Year 1991, Pub. L. 101-510 § 2824, initially required the Navy to lease not less than 260 acres (105 hectares [ha]) of HPS to the City at fair market value for at least 30 years ("Pelosi Legislation"). In 1993, Congress passed special legislation, Pub. L. 103-160, 10 U.S.C. § 2834, giving the Navy authority to convey HPS to the City in lieu of entering a lease. The Navy has determined that it will use this congressional authority for the proposed disposal action.

The closure decision is exempt from NEPA under the Defense Authorization Act, Pub. L. 101-510 § 2906. Navy disposal and reuse actions, however, are not exempt from NEPA requirements. Under the Defense Authorization Amendments, NEPA, and the DBCRA of

1990, as amended, this document must include consideration of CERCLA, 42 U.S.C. § 9601 *et seq.*, and related laws, as set forth for reuse in the Federal Facilities Agreement (FFA) (1991, as amended).

The Proposed Reuse Plan would be implemented by the *Hunters Point Shipyard Redevelopment Plan*, which was adopted by the San Francisco Board of Supervisors in July 1997 (Ordinance No. 285-97). A companion *Design for Development* (City and County of San Francisco Planning Department and the San Francisco Redevelopment Agency, 1997c), containing development controls and standards, was later adopted by the San Francisco Redevelopment Agency Commission. These documents (both reproduced in Appendix D) are implementing tools, intended to facilitate redevelopment of HPS in a manner that is consistent with the Proposed Reuse Plan. The *Redevelopment Plan* and the *Design for Development* will be amended to reflect changes in the Proposed Reuse Plan or mitigation measures developed and adopted as a result of the EIS/EIR.

1.2 LOCATION AND HISTORY

HPS is located within the City and County of San Francisco and covers about 493 acres (200 ha) of dry land and 443 submerged acres (179 ha) on San Francisco's southeast waterfront (Figure 1.2-1). HPS is bordered by San Francisco Bay to the north, south, and east. San Francisco's Bayview-Hunters Point neighborhood borders the site to the west (Figure 1.2-2).

Maritime use of Hunters Point dates back to the 1850s, when privately-owned docking facilities and a timber pier were established. Commercial ship maintenance, repair, and dismantling began at the site in 1868, when the first drydock was built. In 1903, a second drydock was constructed. A third drydock, incorporating part of the first drydock, was built in 1918. Commercial activities adjacent to the drydock area in the late 1800s and early 1900s included fishing camps, packing houses, and a coal-gasification plant.

In 1939, the U.S. Navy purchased the Hunters Point property and subsequently leased it to the Bethlehem Steel Company until late 1941. At that time, the Navy took possession of the property, acquired additional land, and began using it as an annex to the Mare Island facility for ship repair. This property served as a major ship repair and construction facility and was officially designated a U.S. Naval Shipyard on November 30, 1945. The shipyard was used primarily as a Navy industrial operation for the modification, maintenance, and repair of ships (U.S. Navy, 1995a). The mission of HPS before decommission in 1974 was to perform work in connection with the

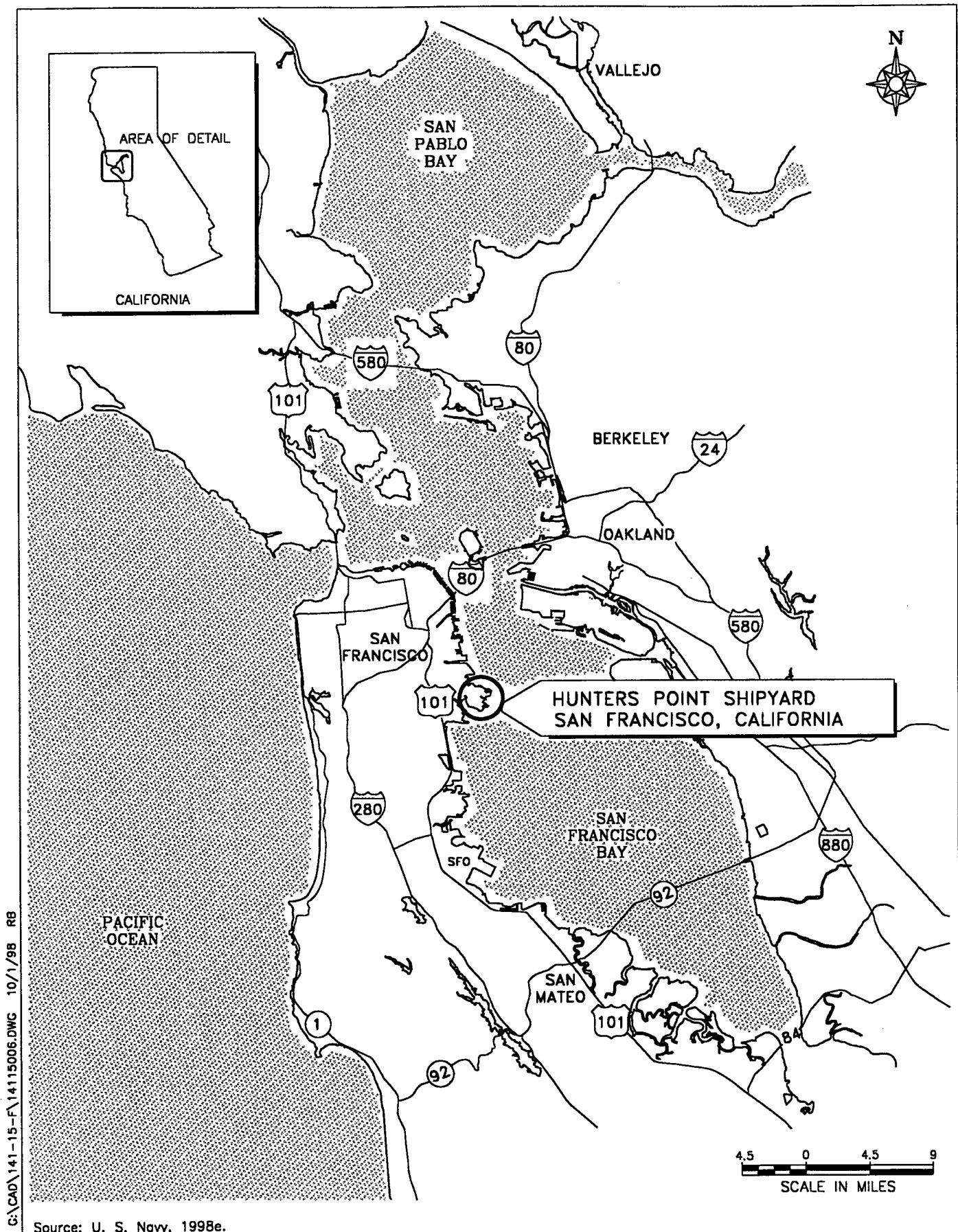


Figure 1.2-1: Area Map of Hunters Point Shipyard

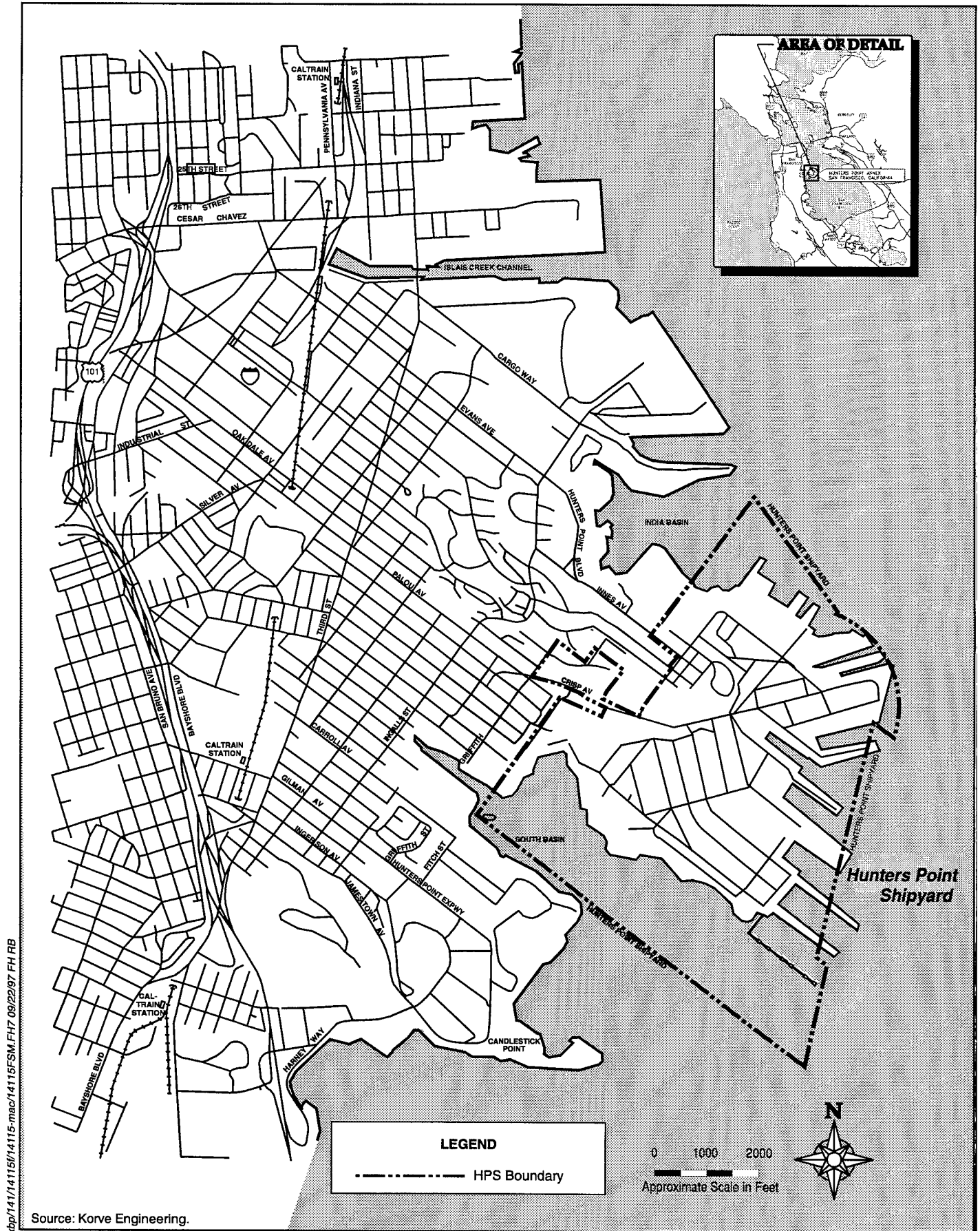


Figure 1.2-2: Hunters Point Shipyard

construction, conversion, overhaul, repair, alteration, drydocking, and outfitting of assigned ships and service craft (U.S. Navy, 1998c).

During World War II, the shipyard was one of the single largest employers in San Francisco, with nearly 17,000 employees. Ship repair activities from 1939 to the 1950s, with the resulting employment, transformed the Bayview-Hunters Point community from a semi-rural to an urban area. In 1974, the shipyard was closed. From 1976 to 1986, the Navy leased the property to Triple A Machine Shop for ship repair activities. Triple A, in turn, subleased to small businesses, artisans, and others. Under Congressional legislation, many of Triple A's tenants acquired leases with the Navy.

During the period of 1986 to 1990, the Navy docked and repaired several Navy ships at the shipyard. In 1990, the shipyard came under the jurisdiction of Naval Station Treasure Island and was redesignated Hunters Point Annex (U.S. Navy, 1996b). In 1994, jurisdiction over Hunters Point Annex was transferred to Naval Facilities Engineering Command, Engineering Field Activity West (EFA West), San Bruno, California; at that point, the property became known as HPS.

1.3 DOCUMENT PURPOSE

To facilitate the requirements of both NEPA and the California Environmental Quality Act (CEQA), California Public Resources Code § 21000 *et seq.*, the Navy, in coordination with the City and the San Francisco Redevelopment Agency (Agency), has prepared this joint *Revised* Draft EIS/EIR. The Navy is the lead agency under NEPA, and the City and the Agency are joint lead agencies under CEQA.

This document assesses the potential significant environmental impacts of the disposal of HPS by the Navy and reuse in accordance with the City's Proposed Reuse Plan, at a general or programmatic level, as set forth in state CEQA Guidelines § 15180 (a) and (b). This document also evaluates alternatives to the Proposed Reuse Plan.

1.3.1 Use of a Joint Document

A joint environmental review document, such as this EIS/EIR, is useful when the Navy's and the City's actions may create potential significant environmental impacts. Both Navy and City decision-makers are required to consider the conclusions of the EIS/EIR in evaluating the environmental impacts of their respective decisions to transfer and reuse the facility. The analysis is presented at a general level of detail, because the actions to be taken are the disposal of the base and the implementation of the Proposed Reuse Plan (which presents land uses at a general level of detail). If, however, a specific component of either the disposal action or Proposed Reuse Plan has not been adequately analyzed under this EIS/EIR, pursuant to CEQA

Guidelines § 15162 and 15163, a supplemental or subsequent EIR might need to be prepared.

1.3.2 Document Organization

The *Revised* Draft EIS/EIR consists of the following main elements:

Chapter 1, Purpose and Need: A required discussion of project purpose and need, intended to provide the reader with an overview of the reasons for disposal and reuse of HPS, including a description of the public involvement process used to solicit input on potentially significant environmental impacts.

Chapter 2, Alternatives, Including the Proposed Action: A description of the proposed action (disposal of HPS and community reuse pursuant to the Proposed Reuse Plan) and alternatives to that action, including a table that summarizes the significant impacts and mitigations in the document.

Chapter 3, Affected Environment: A description of the baseline environmental setting in which the transfer and commencement of reuse will occur.

Chapter 4, Environmental Consequences: An analysis of the environmental impacts of the reuse and the alternatives, ranging from analysis of the impacts of disposal (including complete disposal after remediation and disposal under either a LIFO or a § 334 early transfer) to full implementation of planned land uses at the intensities designated in the Proposed Reuse Plan. This chapter also identifies mitigation measures that will reduce or eliminate effects found to be significant under any of these alternatives.

Chapter 5, Other Considerations: An identification of unavoidable adverse impacts to the environment (NEPA/CEQA); irreversible and irretrievable commitments of resources (NEPA/CEQA); short-term uses and long-term productivity (NEPA/CEQA); and issues related to Environmental Justice and the Protection of Children from Environmental Health Risks and Safety Risks. This chapter also analyzes cumulative impacts (NEPA/CEQA) and growth-inducing secondary population or development growth impacts (CEQA).

Chapters 6 through 9: Provide background information, including consultations with interested and responsible agencies, list of preparers, references, glossary, and EIS/EIR distribution list.

Lastly, appendices provide factual support for much of the analysis contained in the main body of the EIS/EIR. Additional supporting materials are referenced and are available for review at various locations. These locations include the project case files at the San Francisco Planning Department and the San Francisco Redevelopment

Agency, as well as the Navy's Installation Restoration Program (IRP) information repository in the Hunters Point neighborhood at the San Francisco Public Library, Anna E. Waden Branch, 5075 Third Street and at the Main Library at Larken and Grove Streets.

1.4 PUBLIC INVOLVEMENT PROCESS

1.4.1 Scoping Process

Scoping is the process used to identify potential significant environmental issues to be discussed in the Draft EIS/EIR. The scoping period was from June 27, 1995 to July 31, 1995.

As part of the scoping process, a Notice of Intent/Notice of Preparation (NOI/NOP) was published on June 28, 1995, in the Federal Register and the *San Francisco Chronicle* to inform the public of the preparation of the Draft EIS/EIR (Appendix A). Interested Federal, state, and local agencies, organized groups, and private individuals were mailed information concerning the scope of the Draft EIS/EIR.

A public scoping meeting was held on July 12, 1995 at the Southeast Community Facility located in the Bayview-Hunters Point neighborhood of San Francisco. Approximately 30 individuals attended. The NOI/NOP announcements encouraged written comments from those unable to attend the scoping meeting.

1.4.2 Summary of Scoping Issues

During the EIS/EIR scoping period, 21 written and 8 verbal comments were received from government agencies, organizations, and the public. These comments are summarized below and available for review in the administrative record at EFA West in San Bruno, California. The portions of this document that address these comments are indicated.

Transportation: The Metropolitan Transportation Commission (MTC) requested that the EIS/EIR identify the assumptions and methodology used for the traffic and transportation impact analysis. See Section 3.1 and Appendix B.

Air Quality: The U.S. Environmental Protection Agency (U.S. EPA) requested that the EIS/EIR address air quality issues. See Section 3.2.

Land Use: The San Francisco Bay Conservation and Development Commission (BCDC) commented that remediation and planning activities must be consistent with the California Coastal Commission's Coastal Zone Management Program. The San Francisco Recreation and Parks Department expressed concern that the open space components of the project should adhere to local plans and national standards, be adequately funded, and consider existing contamination and ongoing remediation activities. See Section 3.4.

Hazardous Materials: The U.S. EPA requested that the EIS/EIR identify the hazardous materials storage, disposal, and contamination history at HPS. See Section 3.7.

Water Quality and Wetlands: The BCDC maintained that the project should adhere to state and regional water quality and wetlands policies, recommendations, and decisions. See Section 3.9.

Utilities and Public Services: The U.S. EPA requested that the EIS/EIR include a survey of landfill capacity available to accommodate HPS; discuss pollution prevention and energy conservation; and analyze the adequacy of existing police, fire, ambulance, hospital, and health care services for the Hunters Point community. See Sections 3.10, 3.11, and 4.11.

Biological Resources: The U.S. EPA requested that all appropriate Federal and state agencies be consulted in determining the range of plant and animal species that could be affected by the action. Other commentors expressed concern over species living at HPS and supplied lists of species observed at HPS. See Section 3.13.

Public Participation: One commentor suggested additional review to the public prior to issuing the Draft EIS/EIR. Methods to involve the public in the EIS/EIR process at HPS have included the following:

- Notifying and requesting comments from a range of neighborhood associations and minority organizations that may be affected by or be interested in the proposed action.
- Creating a Mayor's Citizens' Advisory Committee (CAC) to participate in the reuse decision-making process.
- Announcing the public meetings in newspapers with a wide circulation and encouraging written comments for those unable to attend the meetings.
- Publishing public notices of hearings, mailing public announcements, and coordinating media coverage and press releases.
- Publishing national public notices in the Federal Register.
- Creating and updating an extensive mailing list to disseminate information.
- Making copies of the Draft EIS/EIR and relevant information, including traffic analysis data, and the results of historic

architectural and historic archeological surveys available at the San Francisco Planning Department.

- Meetings of the Restoration Advisory Board (RAB) to keep the public informed of the progress of the IRP.
- Holding a public hearing of the San Francisco Board of Supervisors prior to the adoption of the *Hunters Point Shipyard Redevelopment Plan* as City Ordinance No. 285-97.

1.4.3 Public Review Process for the Draft EIS/EIR

The Draft EIS/EIR was published for agency and public review on November 14, 1997. Four public hearings were held, and substantial written and verbal comments were received by the end of the comment period on January 20, 1998. Public and agency comments focused on issues related to hazardous waste and existing contamination at HPS, ongoing contaminant remediation activities, and potential cumulative impacts related to traffic and air quality. As a result of public testimony, the Navy, City, and Agency have jointly decided that a *Revised* Draft EIS/EIR be prepared and circulated for public and agency review. Comments received on the November 14, 1997 Draft EIS/EIR have assisted in the development of this *Revised* Draft EIS/EIR. Because this document is available for public comment, the comments on the November 14, 1997 Draft EIS/EIR have not been responded to individually.

1.4.4 Public Review Process

Revised Draft EIS/EIR

The public is invited to review and comment on this *Revised* Draft EIS/EIR. The following steps have been taken to notify the public and other interested parties that the Draft EIS/EIR is available and to announce the beginning of the 45-day comment period:

- A Notice of Availability has been published in the Federal Register; public notices were mailed to those on the mailing list.
- A Notice of Completion was filed with the Governor's Office of Planning and Research State Clearinghouse.

The public and concerned agencies and groups are invited to send written comments on the *Revised* Draft EIS/EIR to the following address:

Engineering Field Activity, West
Naval Facilities Engineering Command
Attn: Mr. Gary J. Munekawa, Code 7032, Bldg. 209/1
Environmental Planning Branch
900 Commodore Drive
San Bruno, CA 94066-5006

and/or

San Francisco Planning Department
Attn: Ms. Hillary Gitelman, Environmental Review Officer
1660 Mission Street, Fifth Floor
San Francisco, CA 94103-6426

Two public hearings are to be held during the public comment period for the formal hearing of comments and receipt of written comments on the *Revised* Draft EIS/EIR. The first hearing will be held in the Hunters Point neighborhood. The second hearing will be held jointly by the San Francisco Planning Commission and the San Francisco Redevelopment Agency Commission in downtown San Francisco. The date, time, and place of the hearings are given in the transmittal letter accompanying this document, and this information will be announced in the media.

Final EIS/EIR

A Final EIS/EIR, incorporating and responding to comments received on the *Revised* Draft EIS/EIR, will be furnished to persons registering official comment on the draft document and to others requesting a copy. A Notice of Availability of the Final EIS/EIR will be published in the Federal Register and in public notices and press releases.

As required under NEPA, there will be a 30-day waiting period after the Final EIS/EIR is published. During this period, the public may comment on the adequacy of responses to comments, and the San Francisco Planning Commission and the Agency will be asked to certify that the Final EIS/EIR meets the requirements of a program-level EIR under CEQA. After the 30-day waiting period, the Navy can issue a NEPA Record of Decision (ROD).

1.4.5 CERCLA Process

During prior public review, public comments requested more information on the Navy's remediation of hazardous substances under CERCLA. HPS was placed on the National Priorities List (NPL) (commonly referred to as "Superfund") in 1989. The Navy has instituted an IRP to remediate contaminated sites at its facilities, as required by CERCLA § 120. Public participation is an integral part of the CERCLA process. The National Contingency Plan (NCP), required by CERCLA § 105, as amended, provides the procedures for preparing for and responding to releases of hazardous substances, pollutants, and contaminants, including requirements for public participation. The CERCLA process, including public participation, has been completed for a portion of HPS and is still in progress for other areas. Public participation efforts completed to date at HPS are described in further detail in Section 3.7.2. An overview of general public participation requirements during the remedial investigation/

feasibility study stage, remedy selection process, and remedial design/remedial action stage of remediation are summarized below.

Remedial Investigation/Feasibility Study Stage

Prior to commencing field work for the remedial investigation(s) under CERCLA, the Navy performs the following community relations activities:

- Conducts interviews with local officials, community residents, public interest groups, or other interested or affected parties to solicit their concerns and information needs and to learn how and when citizens would like to be involved in the CERCLA process.
- Prepares a formal community relations plan (CRP) based on the community interviews and other relevant information, specifying the community relations activities that the lead agency expects to undertake during the remedial response. The CRP for HPS was prepared in November 1988. The purpose of the CRP is to:
 - ◊ Ensure the public appropriate opportunities for involvement in a wide variety of site-related decisions, including site analysis and characterization, alternatives analysis, and selection of remedy.
 - ◊ Identify, based on community interviews, appropriate activities to ensure such public involvement.
 - ◊ Provide appropriate opportunities for the community to learn about the site.
- Establishes at least one local information repository at or near the location of the response action.
- Informs the community of the availability of technical assistance grants.

Remedy Selection Process (Proposed Plan)

The purpose of the remedy selection process is to implement remedies that eliminate, reduce, or control risks to human health and the environment. The lead agency is required to prepare a Proposed Plan that briefly describes the remedial alternatives analyzed, proposes a preferred remedial action alternative, and summarizes the information relied upon to select the preferred alternative. As part of this process, the lead agency conducts the following public involvement efforts:

- Publishes a Notice of Availability and brief analysis of the Proposed Plan in a major local newspaper of general circulation.

- Makes the Proposed Plan and supporting analysis and information available in the administrative record.
- Provides a reasonable opportunity, not less than 30 calendar days, for submission of written and oral comments on the Proposed Plan and the supporting analysis and information located in the information repository. Upon timely request, the lead agency will extend the public comment period by a minimum of 30 additional days.
- Provides the opportunity for a public meeting to be held during the public comment period at or near the site at issue regarding the Proposed Plan and the supporting analysis and information.
- Keeps a transcript of the public meeting held during the public comment period pursuant to CERCLA § 117(a) and makes such transcript available with the CERCLA ROD.

Remedial Design/Remedial Action Stage

The remedial design/remedial action stage includes developing the actual design of the selected remedy and implementing the remedy through construction. Prior to initiation of the remedial design, the lead agency must review the CRP to determine whether it should be revised to describe further public involvement activities.

1.5 RELATED DOCUMENTATION AND PROCESSES

Numerous actions comprise the Navy disposal process. Property disposal, community reuse planning, and the IRP are discussed below.

1.5.1 Navy Disposal Process

Under the Defense Authorization Act for Fiscal Year 1994, the Navy may convey property at HPS directly to the City, Pub. L. 103-160 § 2834, in lieu of entering into the lease required by § 2824(a) of the Defense Authorization Act for Fiscal Year 1991. This authority can be exercised exclusive of the specific Federal property disposal laws and regulations required for disposal pursuant to DBCRA. The Navy's plan to exercise the special legislative authority under Pub. L. 103-160, should the Navy decide to convey HPS to the City, is formalized through publication of this NEPA document. To facilitate the eventual title transfer, the Navy may enter into a LIFOC.

A LIFOC is a lease entered into after the Navy has prepared a Finding of Suitability to Lease (FOSL), complied with NEPA, and issued a final disposal decision for the property. A LIFOC provides immediate possession of the property to the entity identified in the disposal decision as the recipient of the property. Such a lease may be long-term and may be for all or for a portion of the property identified for

conveyance to the lessee in the disposal decision. Use of a LIFO C would enable the City to conduct interim reuse activities on the leased area while the Navy continues with necessary remedial activity. As parcels are remediated, they could be transferred to the City and could be developed for new uses consistent with the Proposed Reuse Plan. As such, under the LIFO C, interim reuse, remediation, and comprehensive development could occur simultaneously at HPS.

The Navy may convey all or some of the parcels in an unremediated condition if the property is otherwise determined to be suitable for disposal, and the statutory conditions for deferral of the CERCLA deed covenant requirements have been satisfied. Any such conveyance must satisfy the U.S. EPA Administrator and the Governor of California. While not currently proposed, this type of early transfer would allow the City to convey all or some of the unremediated parcels to a private developer who could undertake the remediation in lieu of the Navy and in accordance with Federal and state requirements. Early (§ 334) transfers might enable reuse activities to begin sooner than would occur if title were not transferred until remediation is complete. As under a LIFO C, interim reuse, remediation, and comprehensive development could occur at the same time. No form of disposal (total transfer, LIFO C, or § 334) can occur until the EIS/EIR process is complete.

**1.5.2 Community
Reuse
Planning
Process**

The Proposed Reuse Plan and the reuse planning process are described in detail in the *Land Use Alternatives and Proposed Draft Plan, Hunters Point Shipyard* (City and County of San Francisco Planning Department and the San Francisco Redevelopment Agency, 1997a). This plan was prepared by the San Francisco Office of Military Base Conversion, the San Francisco Planning Department, and the Agency. The reuse planning team also included San Francisco's Department of Public Works and Department of Public Health, the Port of San Francisco, the Municipal Railway (MUNI), consultants, and representatives of the Mayor's CAC. Representatives of these groups met over a period of three years to develop land use plan alternatives for the reuse of HPS.

The process for selecting a land use plan began with a series of CAC meetings to develop approaches, guidelines, and goals for reuse of HPS. These meetings were open to the public and held in the South Bayshore community adjacent to HPS. Following these meetings, a day-long, CAC-sponsored conference on the future of HPS was held in February 1994. The conference brought together over 250 community members, consultants, and City staff. This conference resulted in adoption of the following guidelines for developing preliminary reuse alternatives:

- Create jobs for economic vitality, giving priority to the South Bayshore community and to supporting training and educational programs.
- Support the existing businesses and artists' community; expand to accommodate the full range of arts and culture.
- Create diverse new businesses to stimulate the economy of San Francisco and nearby South Bayshore neighborhoods.
- Balance development and environmental conservation.
- Support immediate access for appropriate transitional uses that do not deter long-term development.
- Integrate new land uses into current plans for the Bayview area to provide for open space, affordable housing, and traffic circulation, and to minimize conflicts with industrial uses.
- Acknowledge the history of the site.

The February 1994 CAC workshop also developed six Community Land Use Concepts, representing the earliest stage in the development of land use alternatives. These six concepts had some common themes, including downplaying maritime and heavy industrial uses; emphasizing job creation; focusing on light industrial and local business opportunities; providing mixed-use areas with entertainment and arts/cultural activities; developing housing on the hill area; providing education and training; and creating a link between light industrial and cultural uses.

Over the next four months, additional CAC meetings were held, and the six Community Land Use Concepts were refined to four preliminary alternatives, based on the previously developed guidelines and common themes. The four preliminary alternatives all included a list of potential land uses aimed at creating jobs and business opportunities. However, each alternative had a different dominant land use. The four preliminary alternatives were:

- *Education and Arts:* Emphasized the existing artists' community, education, and job training centers.
- *Industrial:* Focused on providing opportunities for heavy industrial uses, including space for large, single-use tenants.
- *Maritime:* Returned HPS to its traditional use and identity.
- *Residential:* Emphasized housing development.

Another public workshop was held in June 1994. During this workshop, the Education and Arts preliminary alternative was selected for further consideration, and the remaining preliminary alternatives were eliminated from further consideration. The choice of the Education and Arts preliminary alternative was based on the original goals/guidelines established for developing the reuse alternatives. The planning team began a process of designing three preliminary plans, all centered on Education and Arts, but focusing on different land use patterns. The three plans were called "Independent Land Use Zones," "Main Street Vitality," and "Places of Distinction."

The three plans were evaluated through focus groups and workshops attended by CAC members, artist tenants from HPS, leaders of Bayview-Hunters Point educational and cultural organizations, recreational facility managers, private developers, HPS businesses, facility planners for high-tech companies, and organizers of Fort Mason and the Yerba Buena Center for the Arts. The evaluation process led to the development of the *Land Use Alternatives and Proposed Draft Plan, Hunters Point Shipyard* (City and County of San Francisco Planning Department and the San Francisco Redevelopment Agency, 1997a). This document, referred to as the Proposed Reuse Plan, and the reuse planning process were discussed at public hearings. These hearings were held by the CAC, the San Francisco Planning Commission, the San Francisco Redevelopment Agency Commission, and the Base Closure Committee of the San Francisco Board of Supervisors during March and April 1995. The Proposed Reuse Plan was formally endorsed by each body following its public hearing.

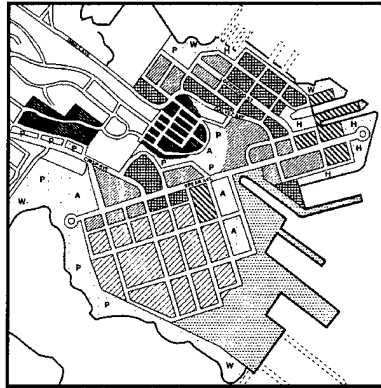
In July 1997, the *Hunters Point Shipyard Redevelopment Plan*, which implements the Proposed Reuse Plan, was adopted by the San Francisco Board of Supervisors (Ordinance No. 285-97). A companion *Design for Development* (City and County of San Francisco Planning Department and the San Francisco Redevelopment Agency, 1997c), containing development controls and standards, was later adopted by the San Francisco Redevelopment Agency Commission. These documents (both reproduced in Appendix D) are implementing tools, intended to facilitate redevelopment of HPS in a manner that is consistent with the Proposed Reuse Plan. The *Redevelopment Plan* and the *Design for Development* will be amended to reflect changes in the Proposed Reuse Plan or mitigation measures developed and adopted as a result of the EIS/EIR.

**1.5.3 Installation
Restoration
Program**

The Navy has instituted an IRP to remediate contaminated sites at its facilities under CERCLA. The CERCLA public involvement process is summarized in Section 1.4.5; the IRP remediation process at HPS is summarized in Section 3.7. A public and agency review board,

referred to as the RAB, has also been established to provide public and agency input and oversight of the remediation process at HPS.

2 Alternatives, Including the Proposed Action



CHAPTER 2: ALTERNATIVES, INCLUDING THE PROPOSED ACTION		
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2. ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter describes the project alternatives evaluated in this Environmental Impact Statement/Environmental Impact Report (EIS/EIR) and the alternatives that were considered but eliminated from detailed review. The project alternatives analyzed in this EIS/EIR include the U.S. Navy disposal of Hunters Point Shipyard (HPS) by one or more methods of conveyance; the City and County of San Francisco (City) and the San Francisco Redevelopment Agency (Agency) reuse alternatives (the Proposed Reuse Plan and the Reduced Development Alternative); and the No Action Alternative. Analyzing the No Action Alternative meets the requirements of both the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C.) § 4321 *et seq.*, and the California Environmental Quality Act (CEQA) California Public Resources Code § 21000 *et seq.*, to evaluate a No Project alternative. Analyzing the Reduced Development Alternative meets the CEQA requirement that an EIR include an alternative that reduces otherwise significant environmental impacts, if the proposed action could cause such impacts.

2.1 NAVY DISPOSAL

Under this alternative, the Navy would convey Federal property at HPS out of Federal ownership. Several methods of conveyance are available to the Navy, including total transfer of fee title, a phased transfer, or an early transfer. As described in Section 1.5.1, Navy disposal is assumed as part of each alternative except the No Action Alternative.

2.2 CITY OF SAN FRANCISCO REUSE ALTERNATIVES

The two City reuse alternatives evaluated in this EIS/EIR are the Proposed Reuse Plan and the Reduced Development Alternative. The Proposed Reuse Plan is the preferred alternative. The two alternatives were based on the community reuse planning process discussed in Section 1.5.2. The Proposed Reuse Plan would be implemented through the *Hunters Point Shipyard Redevelopment Plan*, which was adopted by the San Francisco Redevelopment Agency Commission and the Board of Supervisors in July of 1997. This plan is reproduced in Appendix D.

Utility Infrastructure

Infrastructure upgrades and/or improvements are included in both the Proposed Reuse Plan and the Reduced Development Alternative. Planned infrastructure improvements include upgrades to the following systems:

- Irrigation systems
- Electrical and lighting systems
- Auxiliary water supply systems and other fire protection work
- Gas mains and electrical transmission lines
- Sewer and stormwater systems
- Streets, median islands, sidewalks, gutters and traffic signing

Land Use Categories

Both reuse alternatives are mixed land-use development plans. Both alternatives include reusing buildings at HPS.

The land use categories in these plans are listed below.

Industrial: Could include manufacturing, sales, and distribution businesses that provide medicinal and botanical products, biological products, food products, chemical and allied products, primary and fabricated metals, and electrical/electronic equipment and parts. Could also include wholesale services, auto-related services, ship repair and maintenance, trucking and courier services, equipment leasing, printing and publishing, and motion picture production.

Maritime Industrial: Could include wharves and drydocks for overhauling vessels, storage areas, offices, rail and truck facilities, container freight stations, intermodal container transfer facilities, areas for maintenance of containers or container handling equipment, and other functions necessary to the efficient operation of a terminal. Maritime use at HPS could be combined with industrial use.

Research and Development: Could include data processing, telecommunications, surgical and medical appliances and supplies, ophthalmic goods, x-ray apparatus and tubes, diagnostic substances, electromedical equipment, precision instruments, and miscellaneous durables.

Education and Cultural: Could include education and training facilities, museums, theaters, galleries, specialty retail shops, and conference facilities.

Residential: Could include apartments and one- to two-family dwelling units, houses in the hillside area (Hunters Point Hill), and apartments over commercial units in mixed use areas (see below). The hillside residential area could be designated for commercial uses serving the neighborhoods.

Mixed Use: Could include artist studios, live/work units (units located in mixed use areas that serve as both a workplace and living space), recording studios, hotel/conference facilities, retail buildings, galleries, engineering research and development facilities, small education and health services, small warehousing and distribution facilities, business and arts services, real estate and insurance services, local-serving retail, and restaurants.

Open Space: Could include passive open space (such as gardens), active open space (such as athletic fields), hard surfaces (such as plazas and promenades), and wetlands.

2.2.1 Proposed Reuse Plan Alternative

The March 1995 *Land Use Alternatives and Proposed Draft Plan, Hunters Point Shipyard*, which was revised in January 1997, provides the basis for the Proposed Reuse Plan alternative. (The 1995 *Draft Plan* and January 1997 correspondence amending the *Draft Plan* are available for review at the San Francisco Planning Department, 1660 Mission Street.) The Proposed Reuse Plan would be implemented through the *Hunters Point Shipyard Redevelopment Plan* (San Francisco Redevelopment Agency, 1997). A companion *Design for Development* (City and County of San Francisco and the San Francisco Redevelopment Agency, 1997c), adopted by the San Francisco Redevelopment Agency and Planning Commission in August 1997, contains the development standards and urban design guidelines that apply to the redevelopment area. The *Hunters Point Shipyard Redevelopment Plan* and *Design for Development* are contained in Appendix D.

This EIS/EIR analyzes expected HPS development under the Proposed Reuse Plan at two points in time (2010 and 2025) and under the range of disposal options described in Section 2.1. The amount of development activity expected under the Proposed Reuse Plan is based on a detailed market study prepared by Sedway & Associates in 1995 and would result in about 6,400 new jobs by 2025. A copy of this study is provided in Appendix B.

Reuse Plan Objectives

As articulated in the July 1997 Redevelopment Plan, principle objectives of the Proposed Reuse Plan include the following: to foster employment, business, and entrepreneurial opportunities; to stimulate and attract private investments, thereby improving the City's economic health, tax base, and employment opportunities; to provide for the development of a variety of land use districts; to provide for the development of mixed-income housing; to preserve historic structures; to provide necessary infrastructure improvements; to remove conditions of blight; to encourage cost- and energy-efficient

measures; and to retain existing, viable industries and businesses at HPS.

Distribution of Proposed Land Uses

Land uses under the Proposed Reuse Plan are described in Section 2.2, above, and would be arranged as illustrated on Figure 2.2-1. In general, open space uses would be arranged along the waterfront, except at the western edge of the site, where maritime industrial uses would occupy the shoreline between Drydock 4 and the southern tip of HPS. Residential uses would occupy the hillside areas at the northwest end of the site, mixed use areas would be located in the northern areas and immediately adjacent to the HPS gates, and educational/cultural uses would be located primarily at the northeast corner of the property. Industrial and research and development uses would occupy a majority of the interior areas of the southern portion of HPS, with some smaller zones abutting the northern mixed-use areas. Of the shipyard's approximately 493 acres (200 ha) on dry land, the largest amount (about 250 acres [101 ha]) would be devoted to the maritime industrial, industrial, and research & development land use categories at full build-out in 2025. About 141.5 acres (57 ha) would be devoted to open space, and about 40 acres (16 ha) would be devoted to residential use, with the remainder of HPS devoted to the mixed use and educational/cultural land use categories.

Development Densities

The *Hunters Point Shipyard Redevelopment Plan* contains no limits on the density or amount of development in each land use category under the Proposed Reuse Plan, but the companion *Design for Development* includes specific development controls that would be applicable.

Among these controls is a limitation on dwelling unit density and maximum floor-area ratio (FAR) (i.e., the ratio between the total floor area [for all floors] of a building to the area of the lot on which it is constructed) for non-residential uses. The greatest residential density would be permitted at the highest portion of the site and would be 73 dwelling units per acre (0.4 ha). Other residential areas could be developed at a density of 29 or 54 units per acre (0.4 ha). Allowable building heights, open space requirements, and other design factors would additionally limit residential densities, and density bonuses of up to 15 percent could be achieved by providing additional low- or moderate-income housing. In general, mixed use areas could be developed with a maximum density of 2:1 FAR, with other (non-residential) areas of the site limited to between 1:1 and 0.5:1 FAR.

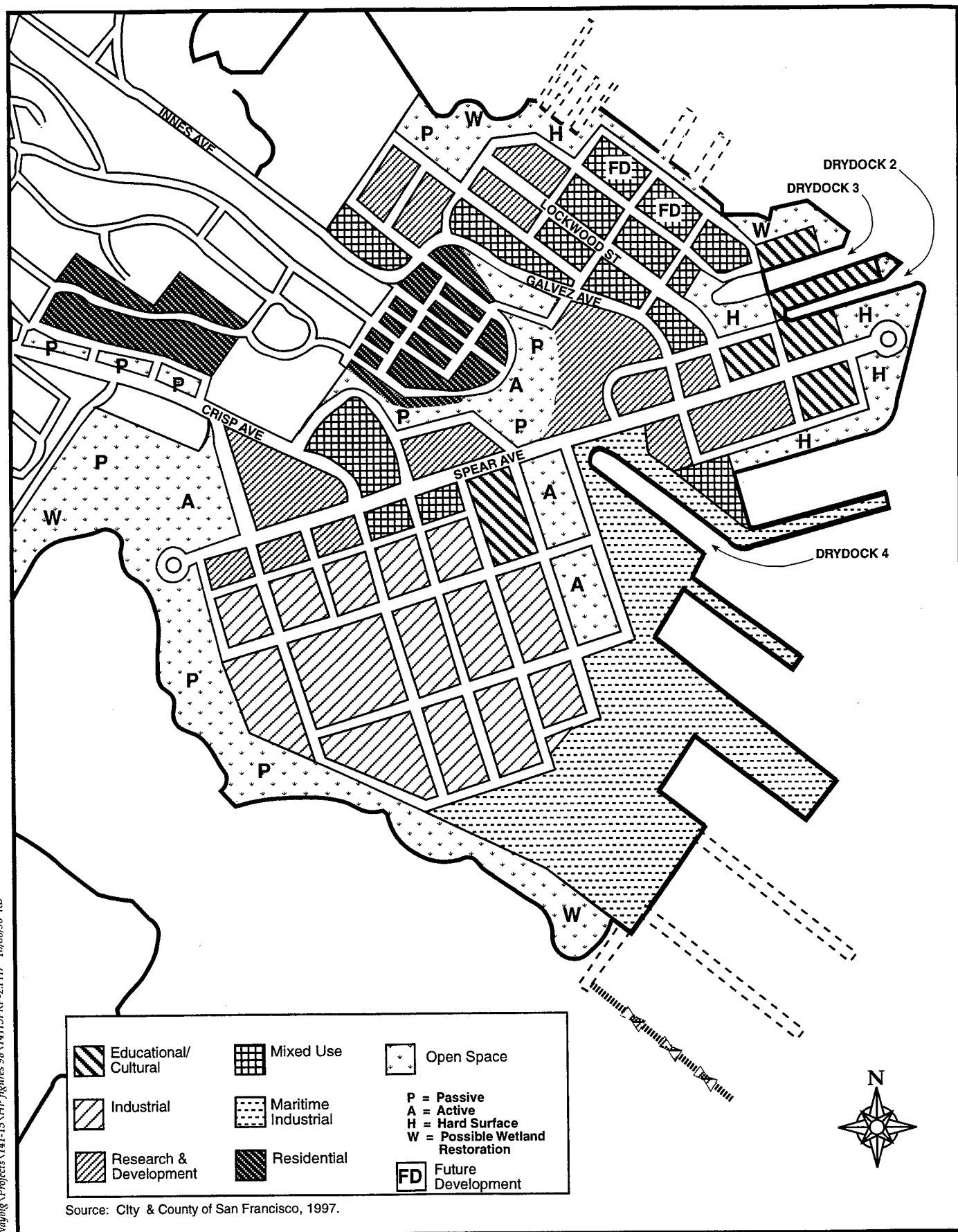


Figure 2.2-1: Proposed Reuse Plan, Hunters Point Shipyard

While these allowable densities could permit substantial development under the Proposed Reuse Plan, this EIS/EIR analyzes only the maximum development that is reasonably foreseeable given characteristics of HPS and market (economic) conditions. Table 2.2-1 provides a breakdown of the potential maximum gross square feet of development that would be reasonable to expect under the Proposed Reuse Plan in 2010 and 2025.

**TABLE 2.2-1: LAND USE DEVELOPMENT
FOR THE YEARS 2010 AND 2025
UNDER THE PROPOSED REUSE PLAN**

LAND USE	POTENTIAL GROSS SQUARE FEET YEAR 2010	POTENTIAL GROSS SQUARE FEET YEAR 2025
Industrial	385,000	775,000
Maritime Industrial	175,000	360,000
Research & Development	65,000	312,000
Cultural/Education	335,000	555,600
Mixed Use	570,000	1,150,000
Live/Work (in Mixed Use Areas)	300,000 (300 units)	500,000 (500 units)
Residential	1,300,000 (1,300 units)	1,300,000 (1,300 units)

Source: Sedway & Associates, 1995; Conrad, 1998.

Notes:

- (1) Residential units and live/work units are assumed to average 1,000 square feet per unit.
- (2) Under the Proposed Reuse Plan for both 2010 and 2025, residential units include 800 single family and duplex dwelling units and 500 apartments over commercial space.
- (3) "Mixed Use" includes live/work units.
- (4) Live/work and residential units are rounded.

Development Standards

The *Design for Development* (reproduced in Appendix D) contains quantitative limitations on height and bulk and standards for site coverage, maximum off-street parking, off-street loading, and usable open space for dwelling units. More qualitative design guidelines provide further concepts and standards to shape future development within HPS areas identified as the "Hill Housing Area," "Lockwood Landing District," and "Industrial/ Research & Development District." The *Design for Development* also illustrates urban design concepts, including those for open space areas, public streets, building placement, and massing. The Proposed Reuse Plan would include development consistent with these standards and foresees implementation over time of the urban design concepts articulated.

Other Features of the Proposed Reuse Plan

The Proposed Reuse Plan would open areas of HPS for public use and would include public access trails along the waterfront, including a possible link to the regional Bay Trail. Undeveloped open space along the southwestern edge of HPS would be opened to the public, and several open space areas would be set aside for development of wetlands. Parks are proposed along the bluff in the residential hill area, in the northern mixed-use area, and in the central industrial area.

The Proposed Reuse Plan would include substantial upgrades to utilities and infrastructure systems at HPS, including roadways, potable water, stormwater and wastewater conveyance systems, electrical, gas, and telephone systems, etc. Policies and objectives in the March 1995 *Land Use Alternatives and Proposed Draft Plan, Hunters Point Shipyard* (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1997a) also call for provision of a community center (Policy 1.7), encouragement of water transportation (Policy 2.3), development of a transit funding mechanism (Policy 2.6), and a transportation system management approach (Objectives 8 & 9). Further descriptions of these proposals are described in Chapter 4 of this EIS/EIR, along with an analysis of related issues (potential impacts) and mitigations.

2.2.2 Reduced Development Alternative

The Reduced Development Alternative includes the same land uses as those in the Proposed Reuse Plan (Figure 2.2-1), but with development reduced in scale, resulting in the potential creation of up to 2,700 jobs by 2025. Table 2.2-2 provides an estimated breakdown of potential gross square footage of development in both 2010 and 2025 under the Reduced Development Alternative.

The Reduced Development Alternative would include development controls or limitations to ensure that reuse remains at the reduced levels shown in Table 2.2-2. It would allow for more deliberate selection of new users and staged implementation of proposed infrastructure improvements.

2.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and it would not be reused or redeveloped. However, under this alternative, the Navy could possibly continue the existing leases (see Appendix C, Tenants List).

**TABLE 2.2-2: LAND USE DEVELOPMENT
FOR THE YEARS 2010 AND 2025
UNDER THE REDUCED DEVELOPMENT ALTERNATIVE**

LAND USE	POTENTIAL GROSS SQUARE FEET YEAR 2010	POTENTIAL GROSS SQUARE FEET YEAR 2025
Industrial	192,000	377,000
Maritime Industrial	88,000	173,000
Research & Development	30,000	100,000
Cultural/Education	165,000	345,000
Mixed Use	130,000	300,000
Live/Work (in mixed-use areas)	65,000 (65 units)	100,000 (100 units)
Residential	300,000 (300 units)	300,000 (300 units)

Source: Sedway & Associates, 1995; Conrad, 1998.

Notes:

- (1) Residential units and live/work units are assumed to average 1,000 square feet per unit.

The Navy is required to complete a series of surveys and reports prior to any leasing, as listed below:

- An appropriate NEPA document will be prepared for environmental impact analysis.
- Appropriate natural and cultural resources determinations and consultation (e.g., Section 106 consultation under the National Historic Preservation Act [NHPA], 16 U.S.C. § 470f, as amended [Pub. L. 89-515]) and air quality conformity determinations under the Clean Air Act (Title 40 of the Code of Federal Regulations [C.F.R.] § 93.153(c)(xiv); 40 C.F.R. § 93.153(c)(xix); 40 C.F.R. § 93.153(c)(xx), and will be completed when required. Appropriate use restrictions, to the extent required, will be included in the lease.
- An environmental baseline survey (EBS) to identify potentially contaminated areas and Finding of Suitability to Lease (FOSL) are required prior to executing a lease, and restrictions and conditions identified in the EBS and FOSL must be incorporated into leases.
- As required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 120(h)(5), the Navy must notify the state prior to entering into any lease that will

encumber the property beyond the date of Department of Defense (DOD) operations. For National Priorities List (NPL) sites, the U.S. Environmental Protection Agency (U.S. EPA) is also notified.

- If applicable, an environmental justice analysis will be performed to evaluate whether the lease would disproportionately impact minority or low-income populations, in accordance with Executive Order 12898, 59 Federal Register (Fed. Reg.) 7629, 1994.

The Navy has leased portions of the HPS property to the Agency for various interim uses prior to remediation or disposal. The Navy is in the process of preparing a basewide FOSL. The purpose of the FOSL is to document environmental findings for HPS and the suitability of the parcels for potential interim leases. Applicable notifications and restrictions for use will be identified in the FOSL and included in any leases and subleases. The Agency will be required to monitor the leased areas and ensure compliance with all lease restrictions. Potential impacts on human and ecological receptors associated with interim uses that could occur prior to completion of remediation are addressed in Section 4.7, Hazardous Materials and Waste. In addition, the City might be required to prepare separate CEQA documentation for leasing/subleasing activities.

Activities associated with Navy caretaker status would include the following:

- Inspecting and maintaining utility systems when necessary to protect public health, the environment, and public safety.
- Periodically maintaining the property, as necessary, to protect the structures from fires or nuisance conditions.
- Continuing security patrols to prevent unauthorized entry.
- Continuing land management programs, such as natural resource management, pest control, erosion control, and tree removal.
- Minimally maintaining roadways.
- Continuing Installation Restoration Program (IRP) activities.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED

In determining the scope of alternatives to be considered under NEPA, the emphasis is on what is "reasonable." Reasonable alternatives include those that are practical or feasible from a technical and economic standpoint (46 Fed. Reg. 18026, March 23, 1981, as amended, 51 Fed. Reg. 15618, April 25, 1986). An alternative can also be

eliminated from further consideration if it does not meet the specific criteria used to select an action. No alternatives to Navy disposal were proposed by Federal, state, or local agencies, or by members of the public during the scoping process.

Under CEQA, alternatives can be rejected from consideration if they fail to meet the major objectives of the project sponsor. The City has been working jointly with the community on a focused effort to develop and evaluate land use alternatives for the reuse of HPS since early 1994. Through the planning process, a wide range of land use alternatives were identified and evaluated. Six community land use concepts were screened using an established set of planning parameters to identify four preliminary alternatives. Once a preferred alternative was identified, three preliminary plans for this alternative were developed that focused on different land use densities and configurations. Each preliminary plan was then assessed using a set of technical, economic, and environmental evaluation criteria. The criteria were based on detailed consideration of planning guidelines developed by the Citizens' Advisory Committee (CAC), which addressed social, economic, and physical development goals for the site. The three preliminary plans that were evaluated but eliminated from further consideration during the reuse planning process (Section 1.5.2), which included public involvement, and the reasons for elimination of those alternatives are described below.

Preliminary Industrial Alternative. Development primarily for industrial use was rejected because it would:

- Isolate HPS from the surrounding Bayview / Hunters Point community and other industrial areas in San Francisco.
- Not meet the original guidelines of integrating new land uses into current plans for the South Bayshore area.
- Not provide space for educational, training, arts/cultural, and other non-industrial uses, thereby failing to meet several goals of the Proposed Reuse Plan.
- Not maximize job creation.
- Not maximize job diversity, one of the guidelines developed in the reuse planning process.
- Not provide a mix of housing opportunities.

The preliminary industrial alternative would also generate the most additional truck traffic on nearby South Bayshore streets and would

create industrial space in excess of market survey demand (Sedway & Associates, 1995).

Preliminary Maritime Alternative. Development primarily for maritime usage was rejected because it would:

- Not attract the range of businesses required for a large number of diverse job opportunities.
- Not offer job training sites.
- Not provide a mix of housing opportunities.
- Not provide arts and cultural activities desired by members of the community and included in the guidelines.

The preliminary maritime alternative could also interfere with the Port of San Francisco's continuing efforts to attract major maritime users to reoccupy vacant piers.

Preliminary Residential Alternative. Development primarily for residential use was rejected because it would:

- Not contribute to job growth and the economy of the Bayview/Hunters Point area as much as other preliminary alternatives.
- Not offer the variety of employment opportunities possible under other preliminary alternatives.
- Not provide educational and job training facilities, failing to fulfill guidelines established during the reuse planning process.
- Not preserve and support the existing business and artists' community.

Evaluating a reuse alternative outside the jurisdiction of the City is not a reasonable alternative because it would not accomplish the Navy's objective to dispose of HPS or the City's objectives to provide for non-military development and reuse of HPS.

2.5 PROJECT APPROVAL REQUIREMENTS

The San Francisco Planning Commission, San Francisco Redevelopment Agency Commission, and Board of Supervisors are the local decision makers expected to use this EIS/EIR in making decisions regarding amendments to the Redevelopment Plan and the

General Plan, transactional agreements with the Navy or private parties, infrastructure improvements, and development proposals.

2.6 COMPARISON OF ALTERNATIVES

Table 2.6-1 lists the potential significant impacts and corresponding mitigation measures for each EIS/EIR alternative. This table may be used to compare the potential impacts of one alternative to those of another. For purposes of the Navy NEPA analysis, direct environmental consequences or impacts are those associated with Federal property disposal, and indirect impacts are associated with community reuse of the property.

2.7 ENVIRONMENTALLY PREFERABLE/ENVIRONMENTALLY SUPERIOR ALTERNATIVE

NEPA requires that an environmentally preferable alternative be identified; CEQA requires that an environmentally superior alternative be identified. The No Action Alternative is the environmentally preferable alternative and environmentally superior alternative because no significant impacts would occur. However, consistent with CEQA requirements, one of the reuse alternatives must further be identified as an environmentally superior alternative. Therefore, the Reduced Development Alternative is the CEQA environmentally superior alternative, because its environmental impacts would be less than those anticipated as a result of the Proposed Reuse Plan, since development would occur at reduced levels.

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Transportation, Traffic, and Circulation	No direct impacts.	No impacts.	<p>Significant Unmitigable Impacts <i>Impact 1: Increased Cumulative Traffic at Third Street/Cesar Chavez Street Intersection.</i> Whether or not the Proposed Reuse Plan is adopted and implemented, traffic on major arterials, such as Third Street, is expected to increase. In addition, the planned Third Street Light Rail Transit (LRT) project would reduce one through traffic lane in each direction on portions of Third Street. The Third Street/Cesar Chavez Street intersection would operate during the P.M. peak hour at level of service (LOS) F in 2015.</p> <p>The following mitigation measure would reduce, but not eliminate, cumulative traffic congestion, which would remain significant. To reduce vehicle miles traveled, traffic congestion, and air quality impacts and to ensure that ridership is encouraged and transit services meet or exceed demand for those services, the Agency and its designees would adopt a transportation system management approach. This would consist of the formation of an HPS Transportation Management Association (TMA), which would develop and implement a Transportation System Management Plan (TSMP). The TSMP would include transit pass sales; transit, pedestrian, and bicycle information; employee transit subsidies; monitoring of transit demand and expansion of transit services as necessary; secure bicycle parking; and parking management guidelines.</p> <p>If deemed appropriate by the TMA, the TSMP could also contain the following additional elements: flexible work time/telecommuting, shuttle service, monitoring of physical transportation improvements, ferry service studies, and encouraging local hiring practices.</p>	<p>Significant Unmitigable Impacts Impact 1 is the same as under the Proposed Reuse Plan.</p>
			<p><i>Impact 2: Increased Cumulative Traffic on U.S. 101 and I-280 Freeway Segments.</i> Whether or not the Proposed Reuse Plan is adopted and implemented, freeway mainline traffic volumes on U.S. 101 near the county line and on I-280 south of U.S. 101 are expected to increase. The Proposed Reuse Plan would contribute about two percent or less to total cumulative traffic volumes along these freeway segments. Freeway mainline LOS at I-280 south of U.S. 101 would operate at LOS E or F during P.M. peak hours in 2015. U.S. 101 at the county line would operate at LOS D, E, or F depending on the amount of background growth in the immediate vicinity of the county line. Since there is no plan</p>	<p>Significant Unmitigable Impacts Impact 2 is the same as under the Proposed Reuse Plan.</p>

TABLE 2.6-1:

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Transportation, Traffic, and Circulation (continued)			<p>to increase the freeway mainline capacity at either of these locations, this cumulative impact would be significant. The project's contribution to increased traffic could be reduced, but not eliminated, by the measures described for Impact 1 above.</p> <p>Significant and Mitigable Impacts <i>Impact 1: Increased Cumulative Traffic at Third Street/Evans Avenue Intersection.</i> Whether or not the Proposed Reuse Plan is adopted and implemented, the signalized Third Street/Evans Avenue intersection would operate at LOS F during both A.M. and P.M. peak hour conditions by 2010. This would be a significant and mitigable impact.</p> <p>By 2025, approximately 28 percent of the total traffic at this intersection would be during the A.M. peak hour and 30 percent during the P.M. peak hour. This would be a significant and mitigable impact.</p> <p><i>Mitigation 1.</i> Eliminate the southbound left-turn lane and re-route turns via Phelps Street to Evans Street. Signalize the Phelps/Evans intersection and remove parking along Phelps and Evans Streets. In addition, adopt a transportation system management approach as described under Significant Unmitigable Impact 1.</p> <p><i>Impact 2: Increased Cumulative Traffic at Evans Avenue/Cesar Chavez Street Intersection.</i> Whether or not the Proposed Reuse Plan is adopted and implemented, traffic operating conditions at the signalized intersection of Evans Avenue/Cesar Chavez Street during the P.M. peak hour would worsen from LOS D to LOS E at full build-out in 2025. This would be a significant and mitigable impact.</p> <p><i>Mitigation 2.</i> To improve operations and reduce delays at this intersection, restripe the existing northbound shared left/right-turn lane on Evans Avenue to create an exclusive left-turn lane and an exclusive right-turn lane. Widen the Evans Avenue northbound approach at Cesar Chavez Street. The southeast corner curb return would require structural modifications to the existing viaduct. Change the existing signal timing plan to include the exclusive left-turn and right-turn lanes.</p>	<p>Significant and Mitigable Impacts This impact is less than significant under the Reduced Development Alternative.</p> <p>This impact is less than significant under the Reduced Development Alternative.</p>

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Transportation, Traffic, and Circulation (continued)			Implementing this mitigation measure would reduce traffic impacts at this intersection from LOS E to LOS C during the P.M. peak hour. In addition, adopt a transportation system management approach as described under Significant Unmitigable Impact 1. <i>Impact 3: Unmet Demand for Public Transportation.</i> Significant impacts on public transportation (transit) services would result from the increase in transit demand. The Proposed Reuse Plan includes a transit implementation plan to accommodate public transportation demand associated with anticipated land uses. The implementation plan would be based on expansions and extensions of existing MUNI services in the HPS area, and service extensions / expansions would be phased to meet the distribution of project-specific development over time. <i>Mitigation 3.</i> Ensure that adequate transit service is provided to meet or exceed demand, as required by the transportation system management approach described under Significant Unmitigable Impact 1.	This impact is less than significant under the Reduced Development Alternative.
			<i>Impact 4: Unmet Demand for Pedestrian and Bicycle Facilities.</i> Pedestrian and bicycle activity at HPS would be generated under the Proposed Reuse Plan. Until planned facilities are constructed, the increase in activity may not be accommodated. <i>Mitigation 4.</i> Require completion of planned pedestrian and bicycle facilities as part of adjacent development. Monitor and ensure completion of these facilities as part of the TSMP described under Significant Unmitigable Impact 1.	This impact is less than significant under the Reduced Development Alternative.
Air Quality	No direct impacts.	No impacts.	Significant Unmitigable Impacts <i>Impact 1: Ozone Precursor Emissions from Increased Traffic.</i> By providing for increased employment and housing, the Proposed Reuse Plan would result in increased vehicle travel, which would result in an increase in ozone precursor emissions. The vehicle emissions analysis already assumes a substantial amount of ridesharing, transit use, and nonvehicular travel modes, which would be met by implementing the Traffic Demand Management (TDM) mitigation strategy. However, the effectiveness of the TDM cannot be predicted with certainty, and the impact would therefore remain significant and unmitigable.	Significant Unmitigable Impacts Impact 1 is the same as under the Proposed Reuse Plan.

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Air Quality (continued)			<p><i>Impact 2: PM₁₀ Emissions from Increased Traffic.</i> Vehicle travel associated with the Proposed Reuse Plan would result in traffic-related emissions of inhalable particulate matter less than 10 microns in diameter (PM₁₀) at 2010 and 2525. PM₁₀ emissions would exceed the Bay Area Air Quality Management District (BAAQMD) impact significance threshold of 80 pounds (36 kilogram [kg]) a day by approximately 371.2 pounds (168.7 kg) a day in 2025. This vehicle emissions analysis already assumes a substantial amount of ridesharing, transit use, and nonvehicular travel modes. Because the effectiveness of these measures is not known, the impact still would be considered significant and unmitigable.</p>	Impact 2 is the same as under the Proposed Reuse Plan.
			<p><i>Impact 3: Toxic Air Contaminants from Stationary, Mobile, and Cumulative Sources.</i> Toxic air contaminant emissions could be generated under the Proposed Reuse Plan from several stationary sources, such as research uses, boilers and emergency generators, and industrial and retail uses. Because the precise nature of these stationary sources has not been determined, their emissions cannot be effectively estimated. BAAQMD considers toxic air contaminants emissions from an individual stationary source to be significant if the health risk to a maximally exposed individual would exceed a cancer risk of 10 in 1 million or U.S. EPA guidance levels for noncarcinogenic toxic air contaminants. In analyzing health risks from individual facilities, BAAQMD does not require considering emissions from surrounding facilities. Therefore, cumulative emissions from multiple facilities could exceed the acceptable exposure level for an individual facility. It is assumed that if cumulative emissions from all stationary sources developed by implementing the Proposed Reuse Plan met the significance criteria for an individual facility, then impacts from plan uses would be less than significant.</p> <p>Vehicle trips generated under the Proposed Reuse Plan would cause motor vehicle exhaust and evaporative emissions, known mobile sources of toxic air contaminants. There is no standard for evaluating the significance of mobile source emissions of toxic air contaminants. In the absence of a definitive significance determination, the impact of toxic air contaminants from vehicle travel associated with the Proposed Reuse Plan is conservatively assumed to be at least potentially significant.</p>	Impact 3 is the same as under the Proposed Reuse Plan.

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Air Quality (continued)			<p>There are no accepted standards to assess cumulative toxic air emission impacts of all potential stationary and mobile sources of toxic air emissions related to the Proposed Reuse Plan. In addition, there is no protocol for evaluating the significance of mobile and stationary source emissions together. Development in San Francisco and throughout the Bay Area could further contribute to cumulative toxic air contaminant emissions and their resulting risks. Only sources relatively close to one another would likely result in direct, substantial cumulative exposure and risk because toxic air contaminant concentrations attenuate substantially with distance. However, all toxic air contaminant sources would likely contribute to ambient conditions in the Bay Area.</p> <p>Under BAAQMD CEQA Guidelines, a project with a significant air quality impact would automatically have a significant cumulative air quality impact. As discussed above, emissions from mobile sources could be significant. Because it is unknown whether the project could, by itself, pose a significant impact, this analysis conservatively assumes that the project's cumulative impact could be significant with respect to combined stationary and mobile toxic air contaminant sources.</p>	
			<p>The following mitigation measures would reduce, but not eliminate, toxic air contaminant emissions. To reduce toxic air contaminant emissions from stationary sources only, the Agency would evaluate and permit all potential stationary sources of toxic air contaminants allowed at HPS as one facility and allow new potential stationary sources only if the estimated incremental toxic air contaminant health risk from all stationary sources at HPS is consistent with BAAQMD significance criteria for an individual facility. These criteria require that, for the maximally exposed individual, the estimated incremental health risk from toxic air contaminants not exceed 10 in 1 million for carcinogens or U.S. EPA's guidance levels for noncarcinogens. Reformulating gasoline and diesel fuel are projected to reduce toxic air contaminants from mobile sources. Also, the trip reduction measures discussed under ozone precursor and PM₁₀ emissions from increased traffic would further reduce toxic air contaminant emissions.</p>	

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Air Quality (continued)			<p>Significant and Mitigable Impact <i>Impact 1: Airborne Dust from Construction and Demolition.</i> Building demolition, renovation, and construction activities have the potential for generating dust. These activities would occur incrementally over an extended build-out period, making it impossible to estimate specific numbers for any particular year. Lead-based paint and asbestos in buildings proposed for demolition would be remediated before being demolished.</p> <p><i>Mitigation 1.</i> BAAQMD officials consider PM₁₀ emissions from construction sites to be potentially significant. As conditions of construction contracts, contractors would be required to implement BAAQMD guidelines for controlling particulate emissions at construction sites.</p>	<p>Significant and Mitigable Impacts This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>
Noise	No direct impacts.	No impacts.	<p>Significant and Mitigable Impact <i>Impact 1: On-site Traffic Noise (East of Donahue Street).</i> Properties within 100 feet (30 meter [m]) of the roadway centerline of Donahue Street would be exposed to Community Noise Equivalent Level (CNEL) above 65 dBA (A-weighted decibel scale) at build-out of the Proposed Reuse Plan in 2025. These noise levels would have a significant and mitigable impact to residential properties proposed for development on the east side of Donahue Street.</p> <p><i>Mitigation 1.</i> To reduce noise impacts to proposed residential properties east of Donahue Street, orient and design new or renovated buildings such that future noise intrusion would be minimized to within acceptable levels. In addition, comply with the San Francisco building code's noise insulation standards for new residential construction. Physical barriers also could be constructed to reduce noise transmission to these residential areas.</p>	<p>Significant and Mitigable Impact Impact 1 is similar to that under the Proposed Reuse Alternative, except that CNELs are projected at 62 dBA in 2025.</p> <p>Mitigation 1 is the same as under the Proposed Reuse Plan.</p>
Land Use	No direct impacts.	No impacts.	No significant impacts.	No significant impacts.
Visual Resources and Aesthetics	No direct impacts.	No impacts.	No significant impacts.	No significant impacts.
Socioeconomics	No direct impacts.	No impacts.	No significant impacts.	No significant impacts.

TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Hazardous Materials and Waste	No direct impacts.	No impacts.	<p>Significant and Mitigable Impacts (See Note 1) <i>Impact 1: Human Exposure to Unremediated Areas During Routine Use (Prior to Complete Remediation)</i> (Note 1). During use that is consistent with the land use designation in the Proposed Reuse Plan, people who occupy portions of HPS prior to its complete remediation could be exposed to risks from unremediated sites, including vacant parcels with exposed soil that might contain contaminants. Unless properly managed, human exposure to contaminants in the soil or groundwater could occur through inhalation of vapors from petroleum products or related compounds that might have accumulated in the soils; from inhalation of soil particles or dust containing elevated concentrations of metals, polycyclic aromatic hydrocarbons (PAHs), or asbestos; or from direct contact with contaminants.</p> <p><i>Mitigation 1.</i> Implement base-wide restrictions on and notifications for leased areas (related to IR sites and areas of concern), as described below.</p> <ul style="list-style-type: none"> Prohibit users from disturbing soil or conducting intrusive activities without prior Navy approval and coordination with Federal and state regulatory agencies. Prohibitions could include, but are not limited to, shoveling, digging, trenching, installing wells, and conducting subsurface excavations. Prohibit users from entering fenced-off areas, areas where environmental investigations are in progress, or areas where access is not authorized, as indicated by appropriate signs. Restrict access to fenced areas of Parcel E until remediation activities have been completed. Maintain intact the current condition of all flooring and interior and exterior pavement and concrete in lease area. Prohibit the use of groundwater at HPS for any purpose. Notify users that petroleum hydrocarbons and hazardous substances have been detected in the soil and groundwater at HPS. 	<p>Significant and Mitigable Impacts This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Hazardous Materials and Waste (continued)			<ul style="list-style-type: none"> Notify users that investigations and remediation are ongoing at IR sites at HPS. Lessee must not interfere with ongoing environmental investigation and remediation efforts. Areas where sampling and remediation crews are working must be avoided. 	This impact and its mitigation are the same as under the Proposed Reuse Plan.
			<p><i>Impact 2: Human Exposure to Contamination During Construction Activities (Prior to Complete Remediation)</i> (Note 1). It is likely that the City or others would from time to time need to excavate site soils to maintain or replace utilities, repair foundations, or make other sub-surface repairs. Skin contact with unremediated soil by construction workers, or inhalation of soils by workers or the public, could pose a human health risk. In addition, inadvertent releases of asbestos-containing material (ACM), lead-based paint (LBP), or polychlorinated biphenyls (PCBs) during routine renovation or repair could expose construction workers, occupants, or visitors to these hazardous materials, which, depending on the quantity of material, could result in adverse health effects.</p> <p><i>Mitigation 2.</i> The following precautionary measures would be implemented by the project proponent during necessary construction activities prior to remediation. These measures are general and would be refined based on site-specific information and consultation with regulatory agencies.</p> <ul style="list-style-type: none"> Obtain site-specific information about soil or groundwater that would be disturbed through new testing or existing information from the Navy and consultation with regulatory agencies. Before disturbing soil or groundwater, or conducting intrusive activities such as shoveling, digging, trenching, installing wells, subsurface excavations, or building renovation, obtain Navy approval and coordinate with Federal and state regulatory agencies. This coordination would result in an identification of precautionary measures to be implemented during construction activities. The precautionary measures would be incorporated into a site-specific Health and Safety Plan (HASP) (see Section 3.7.5) that is consistent with the contaminants present. 	

TABLE 2.6-1:

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Hazardous Materials and Waste (continued)			<ul style="list-style-type: none"> Implement dust suppression measures to limit airborne contaminants in accordance with BAAQMD requirements. Handle and dispose of soil in a manner consistent with the contamination present, as required by Federal, state, and local laws and regulations. <p><i>Impact 3: Human Exposure to Residual Chemical Constituents During Routine Use (After Remediation) (Note 1).</i> Based on the Proposed Reuse Plan, the human populations that could be present once HPS development has occurred include workers, visitors, and residents. Potential human health impacts could occur if these populations were exposed to elevated levels of residual constituents in the soil below remediation zones and in groundwater. Potential exposure pathways include inhalation of contaminated soil particles, inhalation of vapors from groundwater that have migrated into an indoor environment, and direct contact with soil or groundwater with residual chemical constituents.</p> <p><i>Mitigation 3.</i> Implement and monitor compliance with institutional controls designed to be protective of public health, as determined in consultation with the regulatory agencies. These institutional controls would likely include a prohibition on the use of groundwater and on residential uses in non-residential areas, notification regarding residual contamination, and encapsulation methods.</p> <p><i>Impact 4: Human Exposure to Residual Chemical Constituents During Construction Activities (After Remediation).</i> Implementing the Proposed Reuse Plan would require construction activities, such as utility trench excavation, foundation excavation, pile installation, and construction dewatering. Potential impacts associated with each of these types of construction activities are briefly addressed below.</p> <p>During excavation, workers could encounter contaminated soils and groundwater if construction occurs below remediated zones. Construction workers could be exposed to residual contamination through inhaling airborne contaminated dust or direct contact with contaminated soil or groundwater. If drilling is required, for example, to place foundation support piles, contaminated material could be encountered as soil and groundwater are removed to the surface.</p>	<p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p> <p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Hazardous Materials and Waste (continued)			<p>Extensive subsurface excavation could require dewatering to maintain adequate construction conditions. Below-grade soil excavation or trenching activities that require dewatering could potentially encounter contaminated groundwater in Parcels B, C, D, and E. Pumping water from excavation pits or dewatering wells at construction sites could release contaminated groundwater, exposing construction workers or the public.</p> <p><i>Mitigation 4.</i> Perform construction activities in a manner consistent with institutional controls designed to be protective of public health, as determined in consultation with the regulatory agencies, and take the following additional steps, where warranted by site-specific information:</p> <ul style="list-style-type: none"> Obtain information on soil and groundwater contamination by sampling, reviewing existing Navy data, and/or consulting with regulatory agencies. When no sampling results are available, develop and implement a sampling program similar to that required under Article 20 of the San Francisco Public Works Code. If contamination is identified in the areas proposed for disturbance, prepare a site mitigation plan, similar to that required under Article 20 of the Public Works Code, and develop a HASP, as required by California Occupational Safety and Health Act (CAL OSHA). Dispose of groundwater in accordance with applicable permits. 	
			<p><i>Impact 5: Human Exposure to Previously Unidentified Subsurface Hazards (After Remediation)</i> (Note 1). By the time the Proposed Reuse Plan is fully implemented, the Navy will have completed extensive investigations and actions to identify and remove abandoned underground storage tanks (USTs) and to manage identified contamination from UST leaks. There would continue to be a potential risk associated with unidentified abandoned USTs or buried hazardous debris. If an unidentified UST (which could contain hazardous materials or vapors) or buried hazardous debris were uncovered or disturbed after build-out of the Proposed Reuse Plan, workers, visitors, or occupants of nearby buildings could experience adverse health effects.</p>	This impact and its mitigation are the same as under the Proposed Reuse Plan.

TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Hazardous Materials and Waste (continued)			<p><i>Mitigation 5.</i> Inform contractors that unknown hazardous materials could be encountered during demolition or excavation, and instruct them regarding steps to be taken if this occurs. These steps include the following:</p> <ul style="list-style-type: none"> • The contractor shall immediately stop work in the area and notify the San Francisco Department of Public Health (DPH) verbally and in writing. • The contractor shall immediately secure the area to prevent accidental access by construction workers or the public. • The identified material shall be sampled as directed by DPH. • Handling and disposal of identified materials shall be in accordance with DPH direction and in compliance with applicable laws and regulations. • Work on site may resume only where and when permitted by DPH. 	
			<p><i>Impact 6: Ecological Exposure to Residual Chemical Constituents During Construction Activities (After Remediation).</i> Disrupting soil during construction activities could expose receptors to chemical constituents. Pathways for the transport of chemicals to the Bay or proposed wetlands include surface water runoff from construction sites and discharge of potentially contaminated groundwater to the storm water system and then to the Bay. Untreated water carrying dissolved chemicals could exceed water quality objectives for the Bay and impact sensitive receptors. Dockside repairs along the HPS shoreline (in particular, boring and driving piles along the Bay) could disturb sediments in Bay waters, increasing suspended sediment and reducing dissolved oxygen.</p> <p><i>Mitigation 6.</i> For surface water impacts, follow all conditions of the state of California storm water construction permit, including implementing BMPs to reduce storm water runoff from the site.</p>	This impact and its mitigation are the same as under the Proposed Reuse Plan.

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Hazardous Materials and Waste (continued)			<p>For groundwater discharge impacts, follow all permit requirements for discharge into the storm water system or sanitary sewer system. Treat water as appropriate to comply with discharge levels as required by the permit.</p> <p>Assess potential effects on groundwater gradients within construction areas if dewatering is proposed or if new utility lines are proposed that could act as conduits for contaminants in groundwater. Conduct dewatering activities and design utility installations such that contamination does not spread to the Bay or other ecologically sensitive areas.</p> <p>For boring and pile driving activities along the Bay, drive the piles directly into the sediments without boring where possible, to minimize and localize sediment disruption. Where pile driving without drilling is not possible due to shallow bedrock, drive a casing to the solid material, preventing collapse of the material and allowing drilling to occur within the casing without excessive sediment disruption. Then place the pile in the casing and backfill with concrete.</p> <p><i>Impact 7: Cross-Contamination Among Water-Bearing Zones.</i> Piles installed where groundwater contaminants have been identified (Parcels B, C, D and E) could create a conduit for chemicals to move to deeper groundwater zones, resulting in degradation of deeper groundwater.</p> <p><i>Mitigation 7.</i> Place piles in a manner so that there is no conduit for groundwater migration along pile edges. Where possible, drive piles directly into sediments without drilling. If drilling is required, drive casing into bedrock, drill within casing and backfill with cement grout.</p>	<p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>
	<p>No direct impacts.</p>	<p>No impacts.</p>	<p>Significant and Mitigable Impacts <i>Impact 1: Naturally Occurring Asbestos.</i> Because asbestos-containing serpentine rock occurs at HPS, construction-related excavation activities under the Proposed Reuse Plan could cause chrysotile asbestos associated with serpentine to become airborne, creating a potentially significant impact to public health and safety.</p> <p><i>Mitigation 1.</i> Follow BAAQMD, U.S. EPA, and Federal and CAL OSHA regulations for construction and demolition</p>	<p>Significant and Mitigable Impacts This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

TABLE 2.6-1:

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Geology and Soils (continued)			<p>activities. Continuously wet serpentine involved in excavation or drilling operations. Wet and cover stockpiled serpentine. Do not use serpentine as road, surfacing, or paving material. Cap serpentine used as fill material with at least one foot (0.3 m) of clean non-serpentine fill material, and implement institutional controls to prevent future exposure from excavation activities. Treat excavated waste materials containing greater than one percent asbestos by weight as hazardous waste, and transport and dispose of this material in accordance with applicable Federal and state regulations.</p> <p><i>Impact 2: Seismic Hazards Associated with Older Buildings.</i> Potential impacts from seismic activity would occur in older buildings at HPS. Unconsolidated sediments and fill materials underlying the site would be subject to liquefaction, densification, and differential settlement in the event of a sustained earthquake. Strong ground shaking and acceleration is possible from seismic events on the nearby San Andreas, Hayward, and other faults. Seismic activity could increase risks to the public if the occupancy of older buildings is increased during reuse.</p> <p><i>Mitigation 2.</i> Before increasing the occupancy of existing buildings, survey buildings that may be unsafe in the event of an earthquake, and take appropriate steps to prevent injury. These steps could include interior modifications, bracing, retrofits, and/or access restrictions.</p>	<p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>
Water Resources	No direct impacts.	No impacts.	<p>Significant and Mitigable Impacts <i>Impact 1: Discharges of Treated Combined Sewer Overflows.</i> Redeveloping HPS with a combined sewer system would increase combined sewer overflow (CSO) volumes on the Bayside by 4.5 percent and contribute to a potential cumulative Bayside increase of 11 percent.</p> <p>The cumulative increase in CSO volumes at outfalls in the Yosemite basin (38 percent) would have the potential to negatively affect beneficial uses at nearby Candlestick Point State Recreation Area if it would increase the number of days that water-contact recreation and other activities are prohibited.</p> <p><i>Mitigation 1.</i> Eliminate projected increases in CSO volumes caused by storm water discharges to the City's combined system by upgrading or replacing the separated system at HPS</p>	<p>Significant and Mitigable Impacts This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Water Resources (continued)			<p>or by adding substantial storage to a new combined sewer system. Also consider ways to offset nonsignificant increases attributable to sanitary flows.</p> <p><i>Impact 2: Discharges of Storm Water.</i> An estimated 240 million gallons a year (mgd) (908 million liters) a year of storm water is currently discharged via the separated storm water system at HPS. In addition, storm water flows overland to the Bay and causes localized flooding when the system's capacity is exceeded. Three options for upgrading or replacing the existing separated sewer system are being considered. Option 1 (repairs to existing facilities) would perpetuate existing conditions. Under Option 2, a new separated system would be constructed with a greater capacity than the existing system (or Option 1) and would be designed to minimize overland flow and resolve flooding problems. Volumes of storm water discharges would remain roughly the same, however, or decrease slightly if the removal of paved surfaces increases rainwater infiltration as expected. Under Option 3, storm water discharges at HPS would be eliminated or substantially reduced by constructing a combined sewer system and sending storm water to the City's Southeast Water Pollution Control Plant (SEWPCP) for treatment.</p> <p>Existing storm water discharges from HPS do not receive treatment and have been reported to contain industrial pollution, including hydrocarbons, total suspended solids (TSS), zinc, copper, lead, and nickel. Remediation activities are expected to decrease the concentrations of pollutants in storm water discharges, improve the quality of storm water discharges, and improve sediment quality adjacent to HPS.</p> <p>The quality of future storm water discharges will depend on the nature of future land uses and on the effectiveness of water quality control measures. Storm water discharges from HPS are currently permitted under a National Pollution Discharge Elimination System (NPDES) General Industrial Permit issued by the Regional Water Quality Control Board (RWQCB). Under the Proposed Reuse Plan, the City would be required to adhere to the transfer provisions in the General Industrial Permit, which regulate current and future uses and require preparation and adherence to a Storm Water Pollution Prevention Plan (SWPPP). It is unknown to what extent storm water quality</p>	<p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Water Resources (continued)			<p>would improve in the future as a result of remediation activities, new land uses, permit conditions, and control measures. Therefore, the water quality effects of storm water discharges would be considered significant.</p> <p><i>Mitigation 2.</i> To ensure that the quality of storm water discharges improves as anticipated, implement the following measures:</p> <ul style="list-style-type: none"> Develop and implement a SWPPP that includes provisions for controlling soil migration off site (e.g., silt fences, settling units) during periods of runoff and for monitoring possible sources of industrial contaminants. Implement BMPs such as public education and outreach, pollution prevention, and good housekeeping. 	
Utilities	No direct impacts.	No impacts.	<p>Significant and Mitigable Impacts <i>Impact 1: Potable Water Supply and Distribution System.</i> Potable water demand at HPS would increase for consumption, irrigation, recreation, and fire prevention. Projections by the San Francisco Water Department indicate that the potable water supply would meet San Francisco's needs until 2020. Potable water requirements under the Proposed Reuse Plan would represent a small percentage of the City's overall water demand. However, because the potable water distribution system is approximately 55 years old and has deteriorated, it is inadequate to meet HPS water supply reuse requirements. Given this system's deteriorated condition, significant water quality impacts are anticipated.</p> <p><i>Mitigation 1.</i> Prior to authorization of reuse activities within a given area of HPS, assess deficiencies in the water distribution system and address them through planned infrastructure improvements or other actions.</p> <p>As proposed under the draft utility infrastructure plan, replace the potable water distribution system with a new system built to meet demands of proposed development. This would ensure the supply of safe potable water and adequate water pressure. As an alternative to wholesale system replacement, the City also could implement incremental improvements.</p>	<p>Significant and Mitigable Impacts This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

TABLE 2.6-1:

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Utilities (continued)			<p><i>Impact 2: Fire Protection/Saltwater Supply Systems.</i> The potable water distribution system has insufficient pressure for fire protection in the former housing area. Hydrants throughout HPS also have pressures too low for effective fire protection and are incompatible with City equipment. In addition, the low-pressure saltwater system is inoperable.</p> <p><i>Mitigation 2.</i> Prior to authorization of reuse activities within a given area of HPS, assess fire fighting deficiencies in the water systems and address them through planned infrastructure improvements or other actions. Construct a new auxiliary water supply system to augment the water supply for fire fighting purposes. As an alternative to constructing a new system, the City may, in the interim, upgrade the existing potable water distribution system and fire hydrants to meet fire-fighting needs.</p>	This impact and its mitigation are the same as under the Proposed Reuse Plan.
			<p><i>Impact 3: Storm Water Collection System.</i> There may be increases in storm water volumes in certain segments of the system because paved surfaces in parts of HPS would increase with reuse. However, most existing open space at HPS is either paved or hard-packed, and therefore any increase in paved surfaces generally would be offset by proposed landscaping.</p> <p>The sanitary sewer and storm water drainage systems would be upgraded and maintained by the City (Option 1), replaced with a new separated system (Option 2), or replaced with a new combined sanitary/storm system that discharges to the SEWPCP (Option 3). Storm water system deficiencies could be exacerbated if runoff volumes increase in any portion of the system. Localized flooding and overland flow during rain events also could conflict with reuse efforts. Significant but mitigable service deficiencies are anticipated.</p> <p><i>Mitigation 3.</i> Prior to authorization of reuse activities within a given area of HPS, assess deficiencies in the storm water collection system and address them through planned infrastructure improvements or other actions.</p> <p>To mitigate impacts, implement the following measures:</p> <ul style="list-style-type: none"> • Upgrade or replace the storm water collection system as planned in each section of HPS prior to reuse. 	This impact and its mitigation are the same as under the Proposed Reuse Plan.

TABLE 2.6-1:

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Utilities (continued)			<ul style="list-style-type: none"> Restrict the amount of paved surfaces at HPS for no net increase. Install valves, gates, or duckbills at storm line discharge points to prevent tidal surges and movement of contaminated Bay mud into the storm lines. <p><i>Impact 4: Sanitary Collection System.</i> Wastewater flows (dry-weather flows) at HPS would increase over current levels as a result of increased activity (and as a result of a new combined storm water/sanitary sewer system, if Option 3 is implemented).</p> <p><i>Mitigation 4.</i> Prior to authorizing reuse activities within a given area of HPS, assess deficiencies in the wastewater treatment system and address them through planned infrastructure improvements or other actions. Construct a wastewater system at HPS to meet the Proposed Reuse Plan's wastewater needs.</p> <p><i>Impact 5: Natural Gas System.</i> The demand for natural gas would increase. Pacific Gas and Electric (PG&E) would be responsible for installing and maintaining natural gas service lines and connections. However, because the natural gas system is abandoned and no longer operates, significant but mitigable service deficiencies are anticipated.</p> <p><i>Mitigation 5.</i> Prior to authorization of reuse activities within a given area of HPS, assess deficiencies in the natural gas system and address them through planned infrastructure improvements or other actions. Construct a natural gas system according to Federal, state, and local codes to meet the Proposed Reuse Plan's needs.</p>	<p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p> <p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>
Public Services	No direct impacts.	No impacts.	No significant impacts.	No significant impacts.
Cultural Resources	<p>Significant and Mitigable Impact</p> <p><i>Impact 1: Transfer of Property out of Federal Ownership—Historic Resources.</i> The transfer, lease, or sale of a significant historic property from Federal ownership without adequate restrictions or deed covenants to ensure its preservation would have an adverse or significant impact on the historic property, because it would lose the protection provided by Section 106 of the National</p>	<p>There is no impact on historic resources caused by the transfer of property out of Federal ownership under this alternative.</p>	<p>There is no impact on historic resources caused by the transfer of property out of Federal ownership under this alternative.</p>	<p>There is no impact on historic resources caused by the transfer of property out of Federal ownership under this alternative.</p>

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Cultural Resources (continued)	<p>Historic Preservation Act (NHPA). This would apply to all properties eligible for listing on the National Register of Historic Places (NRHP) that are slated for disposal to non-Federal parties.</p> <p><i>Mitigation 1.</i> Implement the measures agreed to in the Memorandum of Agreement (MOA) to assure that equivalent protection is provided after the disposal of HPS. The measures could include the following:</p> <ul style="list-style-type: none"> • Designation of NRHP-eligible buildings and structures as landmarks under San Francisco's historic preservation ordinance or prohibition on demolishing these resources. • Requirement for the use of the Secretary of the Interior's <i>Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings</i> for all alterations proposed to historic resources identified as eligible for listing on the NRHP. • Agreement to inform future project developers of the potential for encountering archeological resources and the required procedures to be followed. <p>There is no direct impact on historic resources caused by the alteration or demolition of historic resources under this alternative.</p>	<p>There is no impact on historic resources caused by the alteration or demolition of historic resources under this alternative.</p>	<p>Significant and Mitigable Impacts <i>Impact 1: Alteration or Demolition of Historic Resources.</i> It is anticipated that historic buildings and structures within the Hunters Point Commercial Drydock Historic District would be rehabilitated and reused. Drydock 4 is currently leased and is expected to continue to be used in the shipbreaking and repair business. However, a significant and mitigable impact would occur if this were not the case or if the rehabilitation and reuse were not done in a proper manner, causing inappropriate alterations or destruction of all or part of the property.</p> <p><i>Mitigation 1.</i> The Proposed Reuse Plan, <i>Hunters Point Shipyard Redevelopment Plan</i>, and associated <i>Design for Development</i> include requirements for retaining and identifying the historical resources described in Section 3.12. These documents also require that alterations that affect the historic resources be implemented according to the Secretary of the Interior's <i>Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings</i> (Proposed Reuse Plan Objective 12, Policy 6).</p>	<p>Significant and Mitigable Impacts This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

TABLE 2.6-1:

SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Cultural Resources (continued)	There is no direct impact on historic resources caused by incompatible new construction under this alternative.	There is no impact on historic resources caused by incompatible new construction under this alternative.	<p><i>Impact 2. Incompatible New Construction.</i> Implementing the Proposed Reuse Plan likely would result in construction within the historic district or adjacent to identified historical resources. This construction could result in significant and mitigable impacts by introducing visual, audible, or atmospheric elements that are out of historic character with the property or that alter its setting.</p> <p><i>Mitigation 2.</i> Any construction within the Hunters Point Commercial Drydock Historic District would require compliance with the policies set forth in the Proposed Reuse Plan, which calls for creating an attractive and distinctive visual character for HPS that respects and enhances the natural features, the history, and the vision for mixed-use development oriented toward arts and industrial uses (Objective 11). It further states that the structures around Drydocks 2 and 3 will be the focus of the arts/cultural and mixed-use district (Objective 12, Policy 2). Construction must also comply with applicable provisions of the Secretary of the Interior's <i>Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings</i>.</p>	This impact and its mitigation are the same as under the Proposed Reuse Plan.
	There is no direct impact on historic resources caused by unidentified archeological resources under this alternative.	There is no impact on historic resources caused by unidentified archeological resources under this alternative.	<p><i>Impact 3. Loss of Unidentified Archeological Resources.</i> Ground disturbance during construction or demolition activities could unearth subsurface prehistoric and historic archeological resources. Upon discovery, if not properly evaluated and treated, important information about the history or prehistory of HPS could be lost.</p> <p><i>Mitigation 3.</i> If development in the four subsurface zones identified as having the potential for containing significant archeological deposits involves construction or installation below the level of fill, retain a professional archeologist to develop a project-specific treatment or monitoring program. If archeological resources are discovered during construction, suspend all work in the immediate vicinity. Avoid altering the materials and their context pending site investigation by a qualified professional archeologist. If the qualified professional archeologist determines that the discovery is significant, notify the SHPO and ensure that an appropriate treatment plan is developed and implemented.</p>	This impact and its mitigation are the same as under the Proposed Reuse Plan.

**TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)**

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Cultural Resources (continued)	There is no direct impact caused by the deterioration of historic property under this alternative.	<p>Significant Unmitigable Impact <i>Impact 1: Deterioration of Historic Property.</i> Historic buildings (except Drydock 4) have been boarded up to minimize vandalism. No further action would be taken to prevent deterioration. These buildings are severely deteriorated, and the Navy does not anticipate having resources to prevent their further deterioration.</p> <p>In the case of Drydock 4, in anticipation of irreversible deterioration, a MOA was executed with the SHPO and ACHP accepting its loss. A similar agreement would be sought for the Commercial Drydock Historic District.</p>	This impact is less than significant under the Proposed Reuse Plan.	This impact is less than significant under the Reduced Development Alternative.
Biological Resources	No direct impacts.	No impacts.	<p>Significant and Mitigable Impacts <i>Impact 1: Increased Human Activity Near Sensitive Habitats.</i> There are six small, unconnected tidal and nontidal wetlands along the Bay at HPS. In total, the wetlands occupy less than 10 acres (4 ha). These wetlands, along with the mudflats and aquatic habitats at HPS, nearby Candlestick Point Recreation Area, and Pier 98, provide some of the most valuable habitat for waterfowl and shorebirds along the western shore of the central Bay. Four small wetland areas would be developed at HPS under the Proposed Reuse Plan, providing additional habitat for waterfowl, shorebirds, and aquatic wildlife.</p>	<p>Significant and Mitigable Impacts This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>

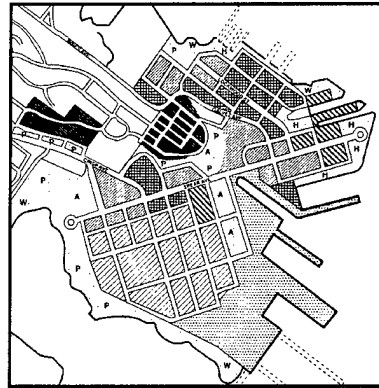
TABLE 2.6-1:
SUMMARY OF SIGNIFICANT ENVIRONMENTAL IMPACTS AND MITIGATIONS (CONTINUED)

Resource Category	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE ALTERNATIVES	
	Disposal	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Biological Resources (continued)			<p>The Proposed Reuse Plan would develop the Bay Trail along the HPS shoreline. This access would increase human and domestic animal activity along the HPS shoreline, thereby potentially reducing the wetlands' habitat value for waterfowl and shorebirds. An increase in the number of people using these areas also could increase disturbances to these sensitive habitats, both directly from their going off-trail and indirectly from noise and movement. Similarly, an increase in uncontrolled domestic animal activity could directly impact wetland-dependent species by increasing loss from predation.</p> <p><i>Mitigation 1.</i> Place barriers along the Bay side of trails to reduce human and domestic animal disturbances to sensitive wetland habitats. Design barriers so that wildlife cannot hear or see people from foraging areas and so that people cannot easily leave the trail to enter sensitive wildlife areas. Develop and implement a public access program to include fencing sensitive areas, posting signs, and imposing leash requirements to further reduce disturbance to wetland areas.</p> <p><i>Impact 2: Increased Litter.</i> Developing the Bay Trail along the HPS shoreline would increase human activity along the shoreline and could increase the likelihood of litter. Litter blown or thrown into wetlands or the Bay would pose a choking and feeding hazard to aquatic wildlife and shorebirds.</p> <p><i>Mitigation 2.</i> Provide adequate trash receptacles along public access areas. Ensure pick-up and trash receptacle maintenance on a regular basis.</p>	<p>This impact and its mitigation are the same as under the Proposed Reuse Plan.</p>
Energy	No direct impacts.	No impacts.	No significant impacts.	No significant impacts.

Note 1: For Hazardous Materials and Waste, Impacts 1, 2, 3, and 5 are considered significant for CEQA purposes only. The City and Agency view the proposed mitigation measures for these impacts as mitigation programs that would require adoption by decision-makers and long-term monitoring. The Navy considers these controls to be regulatory requirements. Therefore, under NEPA, these potential impacts are considered less than significant, and no mitigation is required.

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3 Affected Environment



CHAPTER 3: AFFECTED ENVIRONMENT
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3. AFFECTED ENVIRONMENT

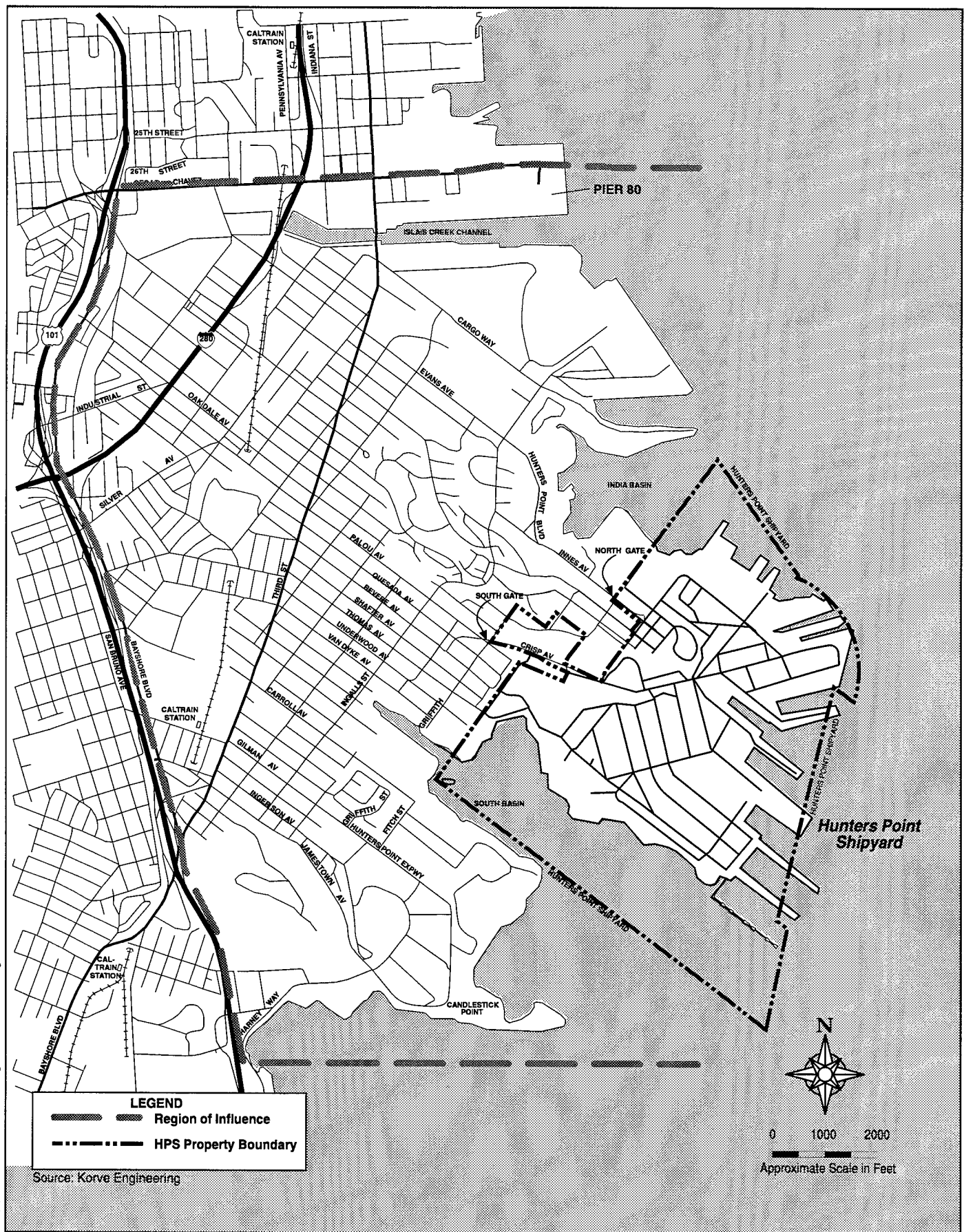
This chapter describes the existing natural and human environment at Hunters Point Shipyard (HPS). This description provides the basis for identifying and evaluating potentially significant environmental impacts that could be caused by the Navy disposal action and the City and County of San Francisco's (City's) proposed reuse. The affected environment is defined by resource areas. Resource areas are described for transportation, traffic, and circulation; air quality; noise; land use; visual resources and aesthetics; socioeconomics; hazardous materials and waste; geology and soils; water resources; utilities; public services; cultural resources; biological resources; and energy.

Also described for each resource area is a region of influence (ROI). An ROI is the likely geographic area in which impacts for a particular resource would occur. The ROI for some resource areas, such as geology and soils, is localized, while for others, such as air quality, the ROI covers a larger region. The South Bayshore planning area of San Francisco, the ROI for most of the resource areas evaluated in this document, is shown on Figure 3-1.

3.1 TRANSPORTATION, TRAFFIC, AND CIRCULATION

This section describes existing facilities and systems that make up the local and regional transportation network serving HPS. The network is composed of a system of regional highways, local streets, parking areas, local and regional bus transit lines, bicycle and pedestrian access routes, truck loading areas, and railroad lines. Included in this analysis is a description of preliminary project plans that could impact transportation, traffic, and circulation at the site. The ROI for the transportation, traffic, and circulation analysis includes regional and local access routes and the street system within HPS. Fourteen existing intersections likely to be affected by implementing the Proposed Reuse Plan have been identified, as well as two new intersections included as part of the proposed reuse alternatives.

Information used to prepare this analysis includes California Department of Transportation (Caltrans) traffic counting detectors installed in 1993, 1994, and 1995 and project-specific studies and analysis. Information in these documents was supplemented by available information regarding potential cumulative projects and assumed regional growth, as described in the *Technical Memorandum, Cumulative Transportation Impact Analysis* (Korve Engineering, 1998, included in Appendix B).



3.1.1 Existing Transportation System

Travel to and from HPS involves the use of regional transportation facilities, highways, and transit systems that connect San Francisco neighborhoods to each other and with other parts of the Bay Area and northern California. This section describes the transportation system that is used to travel to and from HPS.

Regional Highways

The City of San Francisco is served by three regional highways: U.S. Highway 101 (U.S. 101), Interstate Highway 280 (I-280), and Interstate 80 (I-80). Figure 3.1-1 illustrates the locations of these regional highways in relation to HPS. Each of these highways is briefly described below.

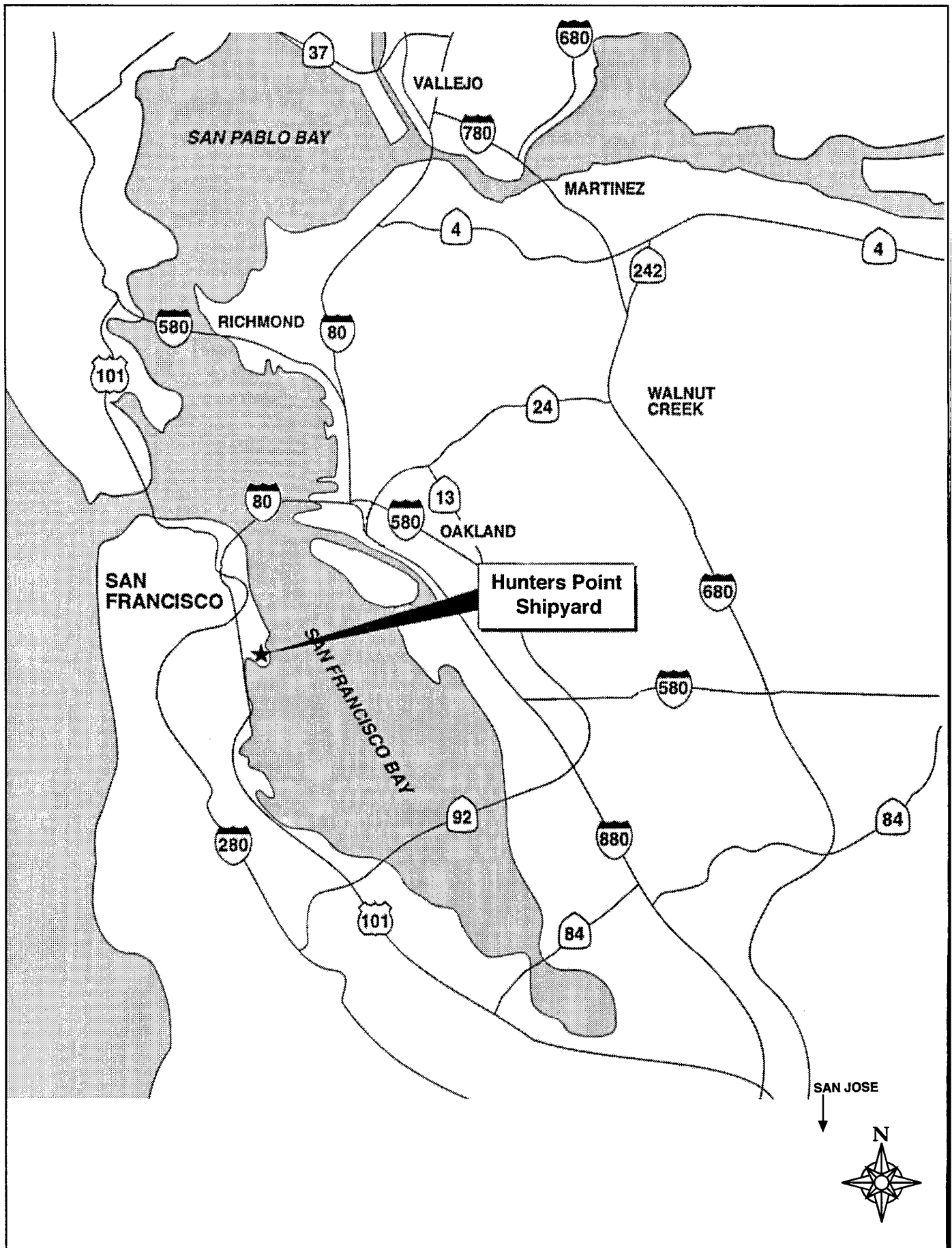
U.S. 101. U.S. 101 is a principal north-south highway linking San Francisco with the Peninsula to the south and with Marin County to the north. Access to and from U.S. 101 in the vicinity of HPS is at Third Street, Silver Avenue, I-280, Cesar Chavez Street, and Vermont/Mariposa Streets (northbound off-ramp only). This eight-lane, limited access highway provides a direct connection with I-80 and the San Francisco-Oakland Bay Bridge (Bay Bridge). Between I-80 and the Golden Gate Bridge, U.S. 101 is a six-lane surface street along Van Ness Avenue, Lombard Street, and Doyle Drive. U.S. 101 carries over 200,000 vehicles per day.

Interstate 280. I-280 is a six- to eight-lane freeway connecting the Peninsula with the southwestern quadrant of the City. The freeway provides a direct connection to U.S. 101 via Highway 92 or Interstate 380 (I-380) and terminates at surface streets in the South of Market area. I-280 carries over 165,000 vehicles per day.

Interstate 80. I-80 provides the primary access to and from the East Bay via the Bay Bridge. It connects directly with U.S. 101 west of Eighth Street. I-80 has ten lanes over the Bay Bridge.

Local Roadway Network

The City is served by a grid of streets, some of which extend beyond City boundaries to connect to Daly City and San Mateo County. The roadway network is categorized into three primary classifications: major arterial roadways, secondary arterial roadways, and local roadways (i.e., roadways exclusively within HPS boundaries). Major arterials distribute and collect freeway-bound traffic to accommodate intracity trips and service other medium-distance movements. Secondary arterials distribute and collect traffic generated in the area by major arterials.



Major and secondary arterial roadways within the South Bayshore planning area that provide access to HPS include Third Street, Bayshore Boulevard, Evans Avenue, and Cesar Chavez Street. These roadways are briefly described below. Figure 3.1-2 shows the location of local streets serving HPS.

Third Street. Third Street is the principal north-south major arterial in the South Bayshore planning area, extending north from its interchange with U.S. 101 and Bayshore Boulevard to its intersection with Market Street. It is the main commercial street in the HPS neighborhood and also serves as a through street and an access way to the industrial areas east of U.S. 101. Third Street is designated as a major arterial¹ and a primary transit street in the Transportation Element of the San Francisco General Plan¹ (City and County of San Francisco, Planning Department, 1995c). It is also designated a Neighborhood Commercial Street² and a Citywide Bicycle Route.

Third Street is a six-lane arterial, with 3 10-foot (3-m) wide traffic lanes in each direction. It has a 4-foot (1.2-m) wide center median, with breaks for left turns at side streets. Separate left-turn lanes are provided at intersections with major arterial roadways but not at other intersections. On-street parallel parking is provided on both sides of most of the street, which effectively reduces the street to two lanes in each direction, except during the A.M. peak period, when parking is prohibited on the east (northbound) side of the street. Third Street carries between 13,000 and 22,000 vehicles per day.

Bayshore Boulevard. Bayshore Boulevard is a four-lane arterial paralleling U.S. 101 on the east from Cesar Chavez Street to Third Street. It is designated a major arterial, a Neighborhood Commercial Street, and a Citywide Bicycle Route. At Third Street, Bayshore

¹ City of San Francisco Planning Department, San Francisco General Plan, Transportation Element defines a major arterial as a crosstown thoroughfare whose primary function is to link districts within the City and to distribute traffic from and to the freeways; these are routes generally of City-wide significance and of varying capacity, depending on travel demand. A primary transit street is defined as having a high transit ridership, high frequency of transit routes, or surface rail operations.

² Ibid. A neighborhood commercial street is a street in a Neighborhood Commercial District, as identified in the General Plan, with predominantly pedestrian passage, encouraged pedestrian-oriented uses, a maintained buffer (trees and parking) between pedestrian and vehicular circulation, and restricted turning movements and curb cuts.

Boulevard crosses U.S. 101 and becomes a six-lane roadway. Left Figure 3.1-2: Roadway Classification turns are made onto side streets from exclusive left-turn lanes. Bayshore Boulevard's northbound and southbound lanes are separated by a center median. Bayshore Boulevard carries between 17,000 and 22,000 vehicles each weekday.

Evans Avenue. West of Third Street, Evans Avenue is designated a major arterial and carries about 10,000 vehicles per day. East of Third Street, Evans and Innes Avenues are both designated secondary arterials in the San Francisco General Plan³. Evans Avenue is a four-lane street connecting to HPS via Innes Avenue.

Cesar Chavez Street. Cesar Chavez Street (formerly Army Street), west of Third Street, is designated a major arterial and a Citywide Bicycle Route and carries 12,000 vehicles per day. It is a four-lane street that provides access to the west and connects to the central waterfront, India Basin, and HPS areas to the east. East of Third Street, Cesar Chavez is a four-lane street that provides access to Pier 80.

Secondary roadways include Ingalls Street, Hunters Point Boulevard, Innes Avenue (on HPS), Cargo Way, Palou Avenue, Crisp Avenue, Industrial Street, Oakdale Avenue, and Silver Avenue. Along these streets, traffic signs include a few stop signs, speed limit signs (25 miles per hour [mph] [40 kilometers (km) per hour]), and some street signs at intersections. There is a signal at Innes Avenue and Donahue Street.

Table 3.1-1 provides a description of major and secondary arterial roadways and describes how to access HPS along their respective routes. Access from U.S. 101 and local freeways also is described.

There are two access points into HPS: the North Gate (which now serves as the main gate) at the intersection of Innes Avenue and Donahue Street, and the South Gate on Crisp Avenue. The South Gate (a secondary gate) is currently closed to traffic, except for emergencies.

Evans and Innes Avenues (as far as the HPS entrance) are the only major arterial roadways directly serving HPS, with other major arterials also providing access, as described previously. Roadways within HPS that provide local circulation are Donahue Street, Galvez Avenue, Spear Avenue, Crisp Avenue, Lockwood Street, Robinson Street, Fisher Avenue, Manseau Street, I Street, and Morrell Street.

³ Ibid. A secondary arterial is defined as a primary intradistrict route of varying capacity serving as a collector for the major thoroughfare and in some cases supplementing the major arterial system.

TABLE 3.1-1: REGIONAL AND LOCAL EXISTING ROADWAYS WITHIN THE SOUTH BAYSHORE AREA

ROADWAY	TYPE OF ROAD	ACCESS TO HPS
Regional Roadways within the South Bayshore Area		
U.S. 101	Eight-lane, north-south freeway linking San Francisco to San Jose (South Bay) and points farther south and Marin County (North Bay) and points farther north.	Off-ramps located at Alemany Boulevard and Bayshore Boulevard/Third Street; on-ramps located at Bayshore Boulevard/Industrial Avenue and Bayshore Boulevard/Third Street. Local roadways connect ramps to HPS.
I-280	Six- to eight-lane north-south freeway connecting San Francisco to San Jose (South Bay) and points farther south.	An off-ramp, west of the U.S. 101 interchange, at Alemany Boulevard and an off-ramp, east of the U.S. 101 interchange, at Cesar Chavez Street. On-ramps located at Indiana Street/25th Street and Pennsylvania Avenue/25th Street. Local roadways connect ramps to HPS.
I-80	Six- to ten-lane freeway linking San Francisco to the East Bay via the San Francisco-Oakland Bay Bridge and connecting with U.S. 101 south of downtown San Francisco.	From I-80, vehicles connect to U.S. 101 and then follow U.S. 101 and local roadways to HPS (Figure 3.1-1).
Local Roadways within the South Bayshore Area		
Third Street	Six-lane major north-south arterial.	Evans Avenue to Hunters Point Boulevard to Innes Avenue.
Bayshore Boulevard	Four-lane major north-south arterial that parallels U.S. 101.	From Bayshore Boulevard, use any number of secondary streets to Third Street proceeding to HPS from Third Street.
Evans Avenue, Hunters Point Boulevard, and Innes Avenue	Four-lane major east-west arterial connecting Cesar Chavez Street to Third Street; becomes a secondary arterial and merges with Hunters Point Boulevard, which merges with Innes Avenue.	Evans Avenue becomes Hunters Point Boulevard and merges with Innes Avenue two blocks before the Main Gate of HPS.
Cargo Way	Four-lane, east-west secondary arterial that provides a large percentage of truck access to the Intermodal Container Transfer Facility, India Basin Industrial Park, and Piers 90-96.	From Cargo Way, travel to Evans Avenue, following access from Evans Avenue to HPS.
Oakdale Avenue	Two- to four-lane, east-west secondary arterial connecting U.S. 101 and Bayshore Boulevard to Third Street and the South Bayshore area.	From Oakdale Avenue, travel to Third Street, following access from Third Street to HPS.
Industrial Street	Four-lane, north-south secondary arterial linking U.S. 101 to South Bayshore area.	From Industrial Way, travel to Oakdale Avenue, following access from Third Street to HPS.
Silver Avenue	Two-lane, east-west secondary arterial providing access to on- and off-ramps to and from U.S. 101 at Bayshore Boulevard and San Bruno Avenue.	From Silver Avenue, travel to Oakdale Avenue, following access from Third Street to HPS.
Carroll Avenue	Four-lane, east-west secondary arterial provides access from Candlestick Point area to Third Street and serves as a designated truck route.	From Carroll Avenue, travel to Third Street, following Third Street access to HPS.
Crisp Avenue	Two-lane, north-south secondary arterial closed to non-emergency traffic at HPS South Gate.	To exit HPS, travel Crisp to Spear, to Lockwood, to Donahue, to Innes Avenue.
Palou Avenue	Two-lane, east-west secondary arterial providing access to Third Street.	From Palou Avenue, follow Third Street access to HPS.
Ingalls Street	Two-lane, east-west secondary arterial providing access to Palou Avenue.	From Ingalls Street, travel to Palou and follow Third Street access to HPS.

Source: Korve Engineering, 1996.

Other Transportation Elements

Parking On Site. There are both on-street parking and off-street parking lots throughout HPS, with about 3,700 parking spaces. Parking is restricted to designated spaces and asphalt parking lots, as identified by signage and markings throughout HPS.

Public Transportation

San Francisco is a transit hub served by local and regional bus, rail, and ferry services. Public transit in San Francisco is primarily provided by six public operators and two private operators.

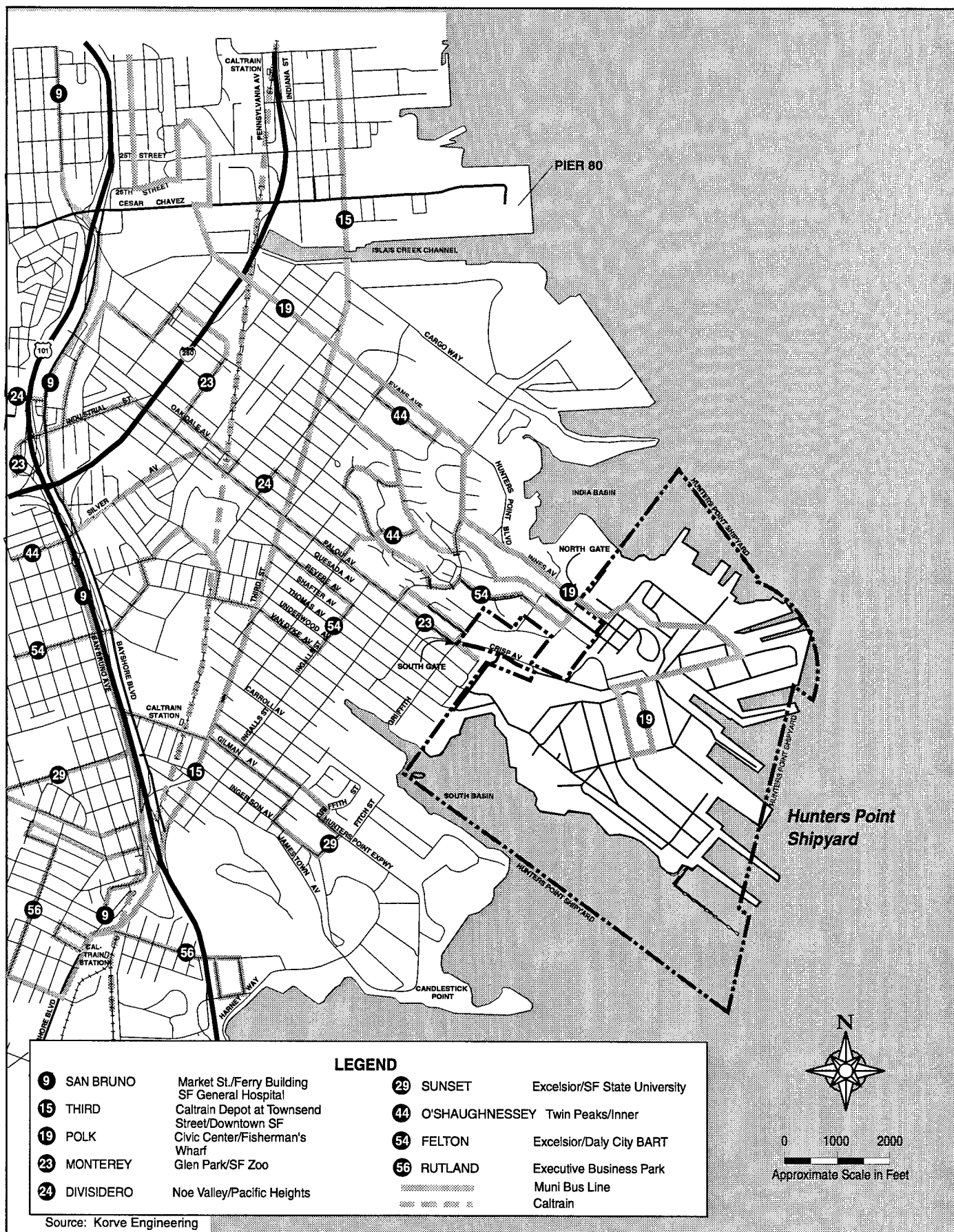
The main regional service is to and from the downtown area, but some service is provided to the South Bayshore area. Regional service is provided to downtown San Francisco from the San Mateo Peninsula and points south by San Mateo County Transit District (SamTrans) bus service and Bay Area Rapid Transit (BART); from the East Bay by Alameda-Contra Costa Transit District (AC Transit) bus service, BART, and ferry service; and from the North Bay by Golden Gate Transit bus service and by ferry service. Once in San Francisco, commuters must take the local San Francisco Municipal Railway (MUNI) bus #19 to HPS.

San Francisco Municipal Railway and Light Rail System

MUNI operates 79 bus lines 7 days a week and carries over 211 million riders annually. MUNI provides direct connections in cooperation with all of the other transit services in the City. Major transfer centers (regional transit terminals) are at the Ferry Building, Transbay Terminal, Embarcadero and Civic Center BART stations along Market Street, Stonestown Shopping Center, and Daly City BART station. Nine MUNI bus routes serve the South Bayshore area, as illustrated on Figure 3.1-3 and described below.

Radial Routes Providing Access to Downtown San Francisco. Primary north-south access from the South Bayshore planning area to the central business district (downtown San Francisco) is provided on two routes: the #9 San Bruno route and the #15 Third Street route.

Route #9 San Bruno: This route operates from Visitacion Valley to the Ferry Terminal via Bayshore Boulevard and Potrero Avenue. The line serves only the western edge of the South Bayshore area. Buses operate every eight minutes during peak periods. Major regional connections include Market Street BART stations and the Ferry Building. Connections along Market Street with other MUNI lines include connections to all MUNI Metro subway lines. The route also serves San Francisco General Hospital. Buses on the #9 San Bruno line are accessible to wheelchair users.



Route #15 Third Street: This is the primary trunk line serving the South Bayshore planning area and is one of the most frequent services operated by MUNI. The route also serves the downtown campus of City College, downtown San Francisco, Chinatown, North Beach, and Fisherman's Wharf via Third Street and Columbus Avenue. The route operates every five to six minutes during peak periods. The route provides important regional connections with the California Train (CalTrain) terminal at Fourth and Townsend Streets and comes within two blocks of the CalTrain Paul Avenue station in the South Bayshore planning area. The route also connects with the BART and MUNI Metro subway systems at both the Montgomery and Embarcadero stations. The route is operated using articulated motor coaches, which are equipped with wheelchair lifts.

Crosstown Routes. Crosstown routes provide service between neighborhoods in San Francisco without necessarily serving passengers in the central business district. The South Bayshore area is served by five crosstown routes.

Route #19 Polk: This is the only route providing direct service to HPS. Although it is considered a crosstown route, it operates primarily north-south, providing service along Innes Avenue, Evans Avenue, and Rhode Island Street. Service is provided every 10 to 15 minutes during peak periods. Major destinations include the Civic Center and Fisherman's Wharf. Regional connections are provided to the BART and MUNI Metro subway system at the Civic Center station. Route #19, however, does not provide direct service to CalTrain, but connects with the #15 Third Street line for service to downtown. Route #19 is operated with standard motor coaches, which are wheelchair accessible.

Route #23 Monterey: This motor coach route operates from Sloat Boulevard and the Great Highway near Ocean Beach to Third Street and Palou Avenue. This is an east-west route that connects with BART at the Glen Park station. The route also serves the San Francisco Zoo and Stern Grove. The South Bayshore terminus of this route, at Palou Avenue and Ingalls Street, is several blocks from the HPS South Gate. Service on this route is provided every 15 minutes during peak periods.

Route #24 Divisadero: This trolley bus route operates from Third Street and Palou Avenue to Pacific Heights via Cortland Avenue and Divisadero Street. The route connects the South Bayshore planning area with Bernal Heights, Noe Valley, the Castro, Western Addition, and Pacific Heights. Major destinations include the Castro Street MUNI Metro station and Kaiser and Mt. Zion hospitals. The line operates every eight minutes during peak periods.

Route #29 Sunset: This motor coach route provides a substantial number of regional and City-oriented connections for the South Bayshore planning area. A number of important regional connections are made on this route, which provides a connection to the Paul Avenue CalTrain station and the Balboa Park BART station, as well as Golden Gate Transit buses at the Golden Gate Bridge toll plaza. In addition to providing regional connections, this route provides unique connections between the South Bayshore planning area and locations within the City, including City College, San Francisco State University, Stonestown Shopping Center, Golden Gate Park, and the Presidio. This route operates every 15 minutes during peak periods.

Route #44 O'Shaughnessy: This motor coach route terminates at the Evans Avenue postal facility within the South Bayshore planning area. Regional connections can be made on this route at the Glen Park BART station. This route connects with MUNI Metro at the Forrest Hill station. Major stations include the U.S. postal facility on Evans Avenue, McAteer High School, Laguna Honda Hospital, and the Sunset and Richmond districts. This route operates every 10 to 15 minutes during peak periods.

Community Service Routes. Community service routes provide local circulation within a neighborhood or relatively small area. These routes are often feeder routes to main line MUNI or regional services. Two community service routes operate within the South Bayshore planning area. The #54 Felton route provides extensive connections within and outside of the South Bayshore planning area. The #56 Rutland route serves only a small part of the area and provides daytime service only.

Route #54 Felton: This route circulates throughout the southernmost part of the South Bayshore planning area and operates near HPS. The route connects the Bayshore, Excelsior, and Ingleside neighborhoods with both the Balboa Park and Daly City BART stations. Connections at the Daly City BART station are particularly important, because this station is also a gateway for SamTrans service. Connections also are made locally to the #15 Third Street and the #29 Sunset lines, which allow for trips to downtown, San Francisco State University, and Stonestown Shopping Center. Service on this line is provided every 20 minutes during peak periods.

Route #56 Rutland: This route serves only a small corner of the South Bayshore planning area, providing service to Executive Business Park. The primary function of this route is local circulation within the Visitacion Valley neighborhood. The #56 line connects with the #15 Third Street and #9 San Bruno lines for crosstown service. This route is one of only two routes in the MUNI system that operates at 30-minute headways during peak periods.

California Train

CalTrain provides commuter rail service between Santa Clara and San Francisco counties. The closest station to HPS is the Paul Avenue station, located two blocks west of Third Street near the Paul Avenue/Gould Street intersection. This station has limited service during the week and no service on weekends. In the morning commute period, one northbound and two southbound trains stop at the station. In the afternoon commute period, two northbound and two southbound trains stop at the station.

Approximately one mile (1.6 km) southwest of the Paul Avenue station is the Bayshore station, which has much more extensive service than the Paul Avenue station. In the northbound direction, 25 trains per day stop Monday through Thursday, 26 trains on Friday, 14 on Saturday, and 10 on Sunday. In the southbound direction, 27 trains stop Monday through Thursday, 28 on Friday, 14 on Saturday, and 10 on Sunday.

Bicycle and Pedestrian Circulation

The San Francisco Department of Parking and Traffic (DPT) completed and adopted the San Francisco Bicycle Plan in December 1996 (City and County of San Francisco, Department of Parking and Traffic, 1996). The fundamental goal of the bicycle plan is to guide San Francisco in becoming a more "bicycle friendly" city. The report presents existing City policies, procedures, practices, infrastructure capabilities, and constraints that affect bicycling.

There are several signed bicycle routes in the South Bayshore planning area. A bicycle route begins at 3Com Park and connects to Third Street via Gilman, Carroll, Thomas, and Revere Streets, with route signs only; there is no separate bicycle lane. The City General Plan designates Third Street, Palou Avenue, and Evans Avenue/Hunters Point Boulevard/Innes Avenue as preferred commuter bike routes.

There are no pedestrian trails designated within HPS; however, the San Francisco Bay Trail, a recreational trail system around the shoreline of San Francisco Bay and San Pablo Bay, is planned to be extended through the South Bayshore area along the shoreline at 3Com Park, Yosemite Avenue, and Third Street. The proposed San Francisco Bicycle Plan includes the addition of pedestrian and bicycle facilities at HPS. The trail system will run along the HPS waterfront and provide access for pedestrians, bicyclists, and non-motorized vehicles.

Truck Service

A substantial number of trucks travel on Third Street in the HPS project area. A July 1996 survey by the DPT showed that during the

A.M. peak period, trucks usually make up 10 to 15 percent of the total traffic on Third Street. Truck levels dropped during the P.M. peak hour, when about four to seven percent of the overall traffic was trucks (City and County of San Francisco, Department of Parking and Traffic, 1996a). Approximately 50 percent of the trucks on Third Street have 3 or more axles, and about 30 percent of trucks have 4 or more axles (City and County of San Francisco, Department of Parking and Traffic, 1993).

Although there are no signs that designate Third Street as a truck route, the San Francisco General Plan identifies Third Street, Bayshore Boulevard, Evans Street, Cargo Way, and Cesar Chavez Street as routes with significant truck traffic. Access to U.S. 101 and the regional freeway facilities is primarily via Third Street and via the U.S. 101 ramps at Bayshore Boulevard and Cesar Chavez Street.

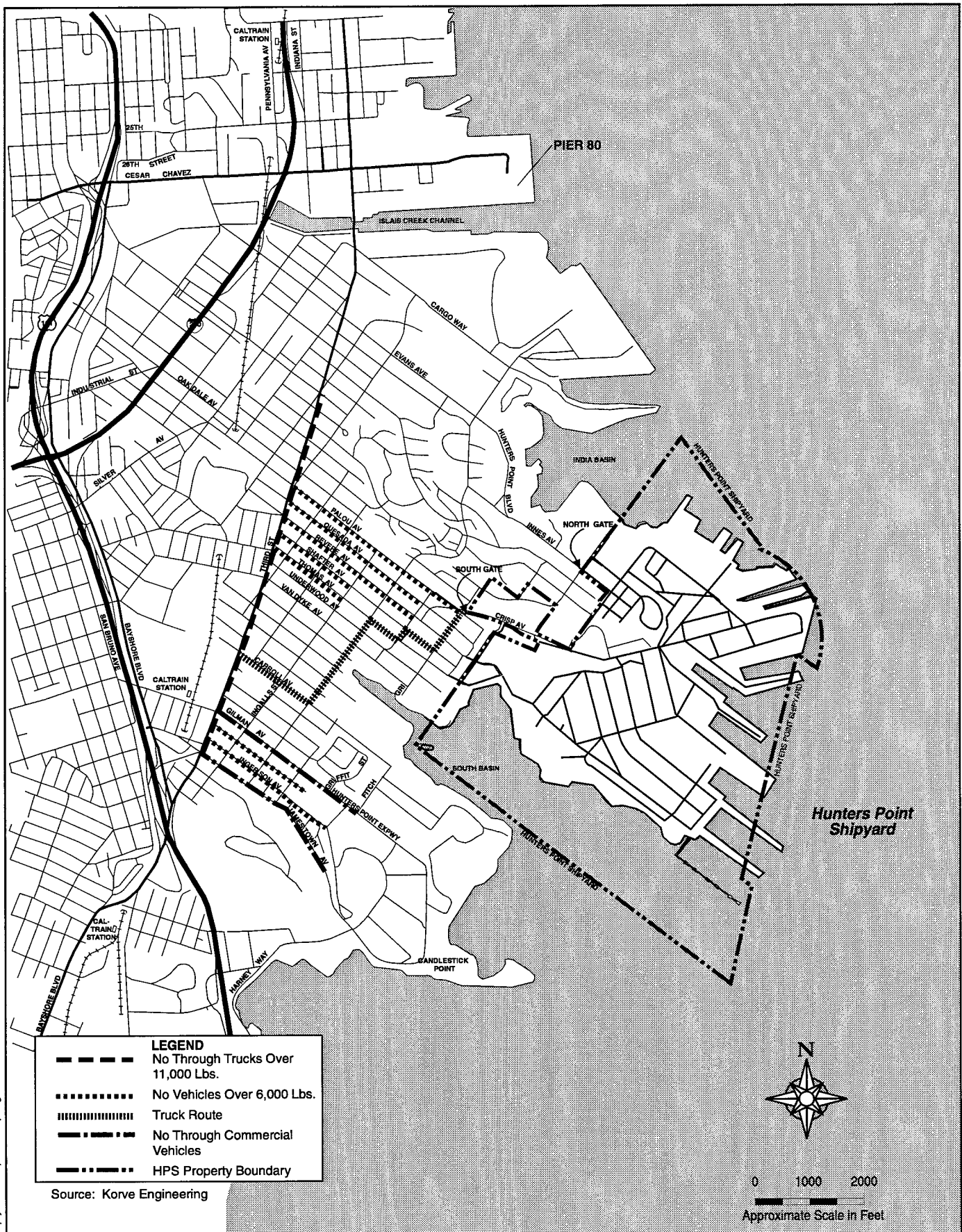
Current truck access to the HPS main gate is from Third Street via Evans Avenue/Hunters Point Boulevard/Innes Avenue. Figure 3.1-4 presents the truck routes and truck restrictions for the South Bayshore planning area. Trucks weighing more than 11,000 pounds (4,989 kilograms [kg]) are prohibited on Third Street, and no through trucks are allowed on Third Street between Jamestown Avenue and Jerrold Avenue.

Truck traffic is allowed between the industrial area near the Crisp Avenue gate to HPS and Third Street. This route does not currently connect with HPS, since the South Gate at Crisp Avenue is closed. Several streets in the South Bayshore planning area have restrictions placed by the City, prohibiting vehicles weighing more than 6,000 pounds (2,721 kg). These streets include Palou Avenue, Quesada Avenue, Revere Avenue, and portions of Shafter Avenue and Thomas Avenue.

According to a California Energy Commission (CEC) study (1995), about 34 traffic accidents involving trucks were reported on Third Street south of Cargo Way within a 2-year period (1994-1995). The same source reported 8 accidents on Third Street between Cesar Chavez Street and Cargo Way; 14 on Cesar Chavez Street between Third Street and U.S. 101; and 2 on Evans between Third Street and Jennings Avenue, all in the same time period. No truck-related accidents were reported on Cargo Way, Hunters Point Boulevard, Oakdale Avenue, or Industrial Street during the same period.

Railroads

There are infrequent freight rail movements into HPS; most are associated with transporting museum rail cars to the Golden Gate Rail Museum south of Crisp Avenue in HPS.



The primary freight route runs parallel to the Joint Powers Board (JPB) commuter rail track (used by CalTrain), previously owned by the Southern Pacific Transportation Company (SP). SP (now owned by Union Pacific) sold its rail track to the JPB with the agreement that SP can provide exclusive rail freight service to San Francisco along this track. The secondary track leading from the JPB mainline to HPS is through the South Gate, along a route through the South Bayshore community. The secondary track has not been maintained. The connection with the main line is provided for the northbound direction only; there is no direct southbound connection.

Rail freight service to HPS and San Francisco is constrained by a lack of a rail freight yard within San Francisco to handle train maneuvers. The nearest rail yard is in San Jose. The tunnel heights along the mainline track also restrict freight movement. Freight movements along the JPB mainline are restricted to midday and evening hours to avoid conflict with CalTrain passenger commuter trains.

3.1.2 Methodology for Collecting Transportation Data

This section presents the methodology used to estimate current traffic volumes, levels of service of HPS roadways, and levels of service for intersections and freeways used to access HPS.

Current Traffic Volumes⁴

To estimate the amount of through traffic volume in the HPS reuse project area, traffic counts were collected on three regional roadways that would most likely experience an increase in use as a result of HPS reuse: U.S. 101 at the San Mateo County line, I-280 south of U.S. 101, and the Bay Bridge. Results of the traffic counts are presented in Appendix B, Tables B-4 and B-5. Traffic counts along these three regional screenlines were collected for the morning period between 7:00 and 9:00 A.M. and the evening period between 4:00 and 6:00 P.M. (Screenlines are hypothetical lines that would be crossed by a person traveling between San Francisco and other parts of the region; they are the measurement points for the freeway travel projections presented in this analysis.) Traffic operating conditions were analyzed for the peak

⁴ Existing traffic conditions are based on traffic counts from a number of sources, including turning movement counts conducted in 1993, 1994, and 1995, traffic volume information published by Caltrans, and mainline detector volumes (i.e., volumes collected through the use of traffic counting hoses). Turning movement counts were conducted by Korve Engineering in November 1993, November 1994, and April 1995. Traffic counts and volumes are presented in Section 4.1, Transportation, Traffic, and Circulation and Appendix B. Copies of traffic data sheets are available at the San Francisco Planning Department.

hour of the period, which generally occurs between 8:00 and 9:00 A.M. and 5:00 and 6:00 P.M.

Traffic volumes during the peak hours were compared to the general capacity values to calculate the volume-to-capacity (v/c) ratio⁵ to evaluate whether excess capacity was available to accommodate future traffic growth. At these screenlines, the v/c ratios generally ranged between 0.70 and 0.90, which indicates that excess capacity does exist, although a large amount of the roadway capacity is used by existing traffic.

Similarly, traffic volumes on 11 selected access ramps that serve HPS from U.S. 101 and I-280 were collected to calculate existing v/c ratios. Most of the ramps have low v/c ratios during peak hours, indicating available capacity on the ramps (Section 4.1, Table 4.1-7). However, the following ramps have v/c ratios approaching 0.90:

- The U.S. 101 northbound off-ramp to Bayshore Boulevard/Cesar Chavez Street during the A.M. peak hour.
- U.S. 101 southbound on-ramp from Bayshore Boulevard/Third Street during the P.M. peak hour.
- U.S. 101 northbound off-ramp to Third Street/Bayshore Boulevard during the A.M. peak hour.

The closure of I-280 following the 1989 Loma Prieta earthquake resulted in an increase in traffic volumes on Third Street, as vehicles diverted to Third Street for north-south movements. This shift in traffic volumes onto Third Street was reflected in higher volumes on the northbound off-ramps during the A.M. peak hour and southbound on-ramps during the P.M. peak hour.

Intersection and Highway Evaluation for Level of Service⁶

The intersection capacity utilization (ICU) and Highway Capacity Manual (HCM) were used to evaluate the existing weekday peak-hour operations of 14 signalized intersection that could be affected by

⁵ A v/c ratio is the volume of vehicles on a roadway divided by the available capacity of the roadway.

⁶ Existing intersection operations were evaluated using the methodology presented in the 1985 Highway Capacity Manual (revised, 1994) for signalized and unsignalized intersections. The methodology presented in the Transportation Research Board, Circular 373, was used to evaluate all-way stop-controlled intersections.

proposed HPS reuse. The level of service (LOS) is used to describe how efficiently an intersection operates.

The ICU method of calculating intersection LOS determines saturation flow rates and makes assumptions for time loss. The assumptions used in this method were based on field research in the HPS area. LOS threshold volumes from the City were used to evaluate roadway segments.

Under the HCM methodology, LOS for signalized intersections is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. Specifically, LOS criteria are stated in terms of the average stopped delay per vehicle for a 15-minute analysis period (see Table 3.1-2). Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group in question.

**TABLE 3.1-2: HCM LEVEL OF SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS**

LEVEL OF SERVICE	STOPPED DELAY PER VEHICLE (SECONDS)
A	<5.0
B	<5.0 and <15.0
C	>15.0 and <25.0
D	>25.0 and <40.0
E	>40.0 and <60.0
F	>60.0

Source: Transportation Research Board, 1994.

LOS ranges from A, representing no major delays, to F, representing congestion and long delays. An intersection operating at A through C indicates that the roadway is operating efficiently. Minor delays are possible on an arterial with LOS D (LOS D is the design level recommended by the American Association of State Highway Transportation Officials and supporting City guidelines). LOS E represents traffic volumes at or near roadway capacity, and LOS F is characterized by stop-and-go traffic with long delays.

Traffic conditions at 14 existing intersections were evaluated using count data collected in November 1993 and 1994 and May 1995 (Figure 3.1-5). Five intersections are within HPS, and the remaining nine intersections are located throughout the South Bayshore planning area. The A.M. peak period counts were conducted between 7:00 A.M. and 9:00 A.M., while the P.M. peak period counts were conducted between 4:00 P.M. and 6:00 P.M.

Intersections within HPS. Based on the 1993, 1994, and 1995 traffic counts, all five intersections at HPS operated with minimal or no delay (LOS A) during both the A.M. and P.M. peak hours.

Intersections outside HPS. During the A.M. peak hour, all nine intersections in the South Bayshore planning area operated with minimal delay at LOS C or better conditions. Data are provided in Table 3.1-3.

During the P.M. peak hour, eight intersections operated at LOS C or better. The signalized intersection at Evans Avenue and Cesar Chavez Street operated at LOS D because of heavy northbound left turns from Evans Street to Cesar Chavez Street and heavy westbound left turns from Cesar Chavez Street to Evans Street.

The DPT conducted additional A.M. and P.M. peak-hour turning movement counts at Cesar Chavez Street/Third Street and at Third Street/Evans Avenue in October 1997. These more recent counts indicated that the Cesar Chavez Street/Third Street and Third Street/Evans Avenue intersections perform at LOS C and LOS D conditions, respectively, during both the A.M. and P.M. peak hours (City and County of San Francisco, Department of Parking and Traffic, 1997).

Using a different LOS methodology, the California Energy Commission (1995) found existing operations at Cesar Chavez/Third and Cesar Chavez/Evans to be at LOS F. This finding suggests that there are times when traffic volumes at critical intersections in the area exceed the capacity of those intersections.

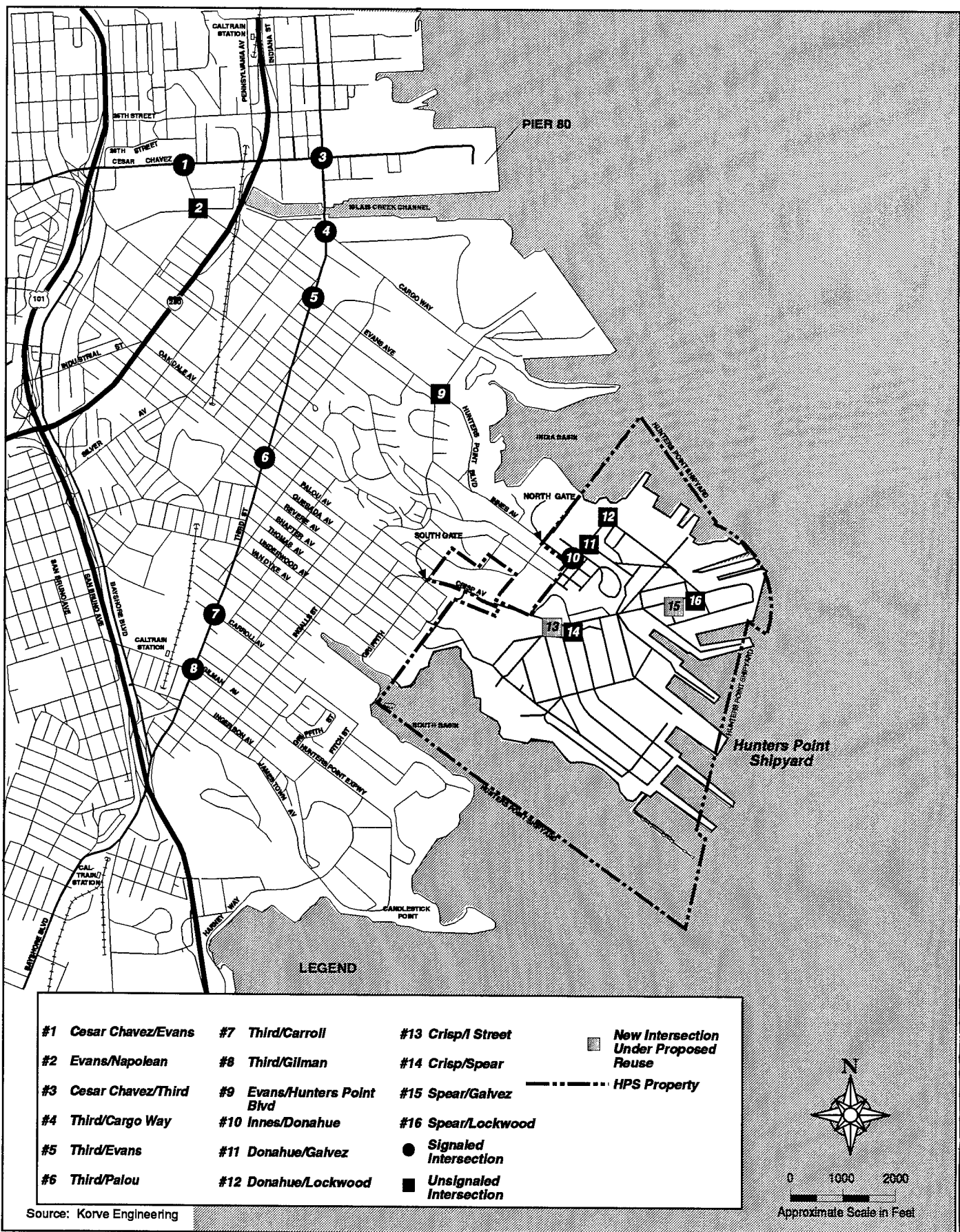


TABLE 3.1-3: INTERSECTION LEVEL OF SERVICE, 1993

INTERSECTION	A.M. PEAK		P.M. PEAK	
	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS
City and County of San Francisco Streets				
#1 Cesar Chavez/Evans	24.0	C	39.4	D
#2 Evans/Napoleon	6.8	B	6.7	B
#3 Cesar Chavez/Third*	12.7	B	14.3	B
#4 Third/Cargo Way	18.8	C	11.2	B
#5 Third/Evans*	17.8	C	16.2	C
#6 Third/Palou	11.2	B	10.0	B
#7 Third/Carroll	5.9	B	5.9	B
#8 Third/Gilman	11.7	B	9.7	B
#9 Evans/Hunters Point Blvd.	6.0	B	8.0	B
Hunters Point Shipyard Streets				
#10 Innes/Donahue	0.2	A	0.2	A
#11 Donahue/Galvez	3.3	A	2.9	A
#12 Donahue/Lockwood	3.5	A	3.5	A
#13 Crisp/I Street	project proposed		project proposed	
#14 Crisp/Spear	3.0	A	2.8	A
#15 Spear/Galvez	project proposed		project proposed	
#16 Spear/Lockwood	2.7	A	2.7	A

Source: Korve Engineering, 1996.

* In October 1997, the DPT conducted A.M. and P.M. peak-hour turning movement counts at Cesar Chavez Street/Third Street and at Third Street/Evans Avenue. The Cesar Chavez Street/Third Street and Third Street/Evans Avenue intersections performed at LOS C and LOS D conditions, respectively, during both the A.M. and P.M. peak hours (City and County of San Francisco, Department of Parking and Traffic, 1997).

3.1.3 Future Transportation System

This section discusses proposed changes to the transportation systems in the project area and, therefore, the future context of the HPS alternatives. These changes are in addition to those proposed as part of the Proposed Reuse Plan, which are described in Section 4.1.

Seismic Retrofit of I-280

The seismic retrofit on I-280 and its interchanges with U.S. 101 are ongoing and are expected to be completed by 2010. Traffic has been rerouted to local streets as a result of the construction. Although sections of I-280 were completed in 1997 and were reopened, a significant shift of vehicles from local streets has not occurred. The reason for this is unknown. It is anticipated that traffic will continue to shift gradually over the next year from local streets back to I-280 and U.S. 101.

Third Street Light Rail Line

In April 1998, the City issued a draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for a proposed

Third Street Light Rail Transit (LRT) project (U.S. Department of Transportation, Federal Transit Administration and the City and County of San Francisco, Planning Department, 1998). The project would extend light rail into the southeastern quadrant of the City and link some or all of Chinatown, downtown, South of Market, Potrero Hill, Bayview Hunters Point, and the Visitacion Valley/Little Hollywood neighborhoods, primarily along Third Street. The LRT project would be constructed in two phases.

The first phase of the Third Street LRT project would extend the J-Church light rail line from the MUNI Metro Extension along Third Street and Bayshore Boulevard to a southern terminal at the CalTrain Bayshore Station near the county line, a total of 5.4 miles (8.7 km). Implementation of the first phase would require the removal of one travel lane in each direction along portions of Third Street and Bayshore Boulevard. Phase one would be operational by 2003.

The second phase of the Third Street LRT project would establish an independent light rail line (not integrated with the MUNI Metro system) from the CalTrain Bayshore Station along Bayshore Boulevard and Third Street to a new subway north of Brannan Street extending into Chinatown. The northern terminus of the subway would be a station at Stockton and Clay Streets. The total length of this alignment would be 7.0 miles (11.2 km). Phase two would not be constructed until sometime after 2005 (U.S. Department of Transportation, Federal Transit Administration, and the City and County of San Francisco, Planning Department, 1998).

Mission Bay Project

In September 1998, the City certified completion of a Subsequent EIR for the proposed Mission Bay project. The project consists of a new plan for developing the Mission Bay project area near the eastern shoreline of the City, about 1 mile (1.6 km) south of the downtown financial district and about 3.5 miles (5.6 km) north/northwest of HPS. The plan calls for mixed-use development, which would include retail space, a University of California San Francisco extension campus for instruction and research, support space, light manufacturing, public school, hotel, police and fire stations, and residential units. The Mission Bay project also includes a revised transportation network, consisting of a series of new east-west streets, an extension of Owens Street north and east to connect to Third Street, and realignment and extension of Fourth Street south to Mariposa Street (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1998).

Other Possible Network Changes

In addition to the network changes described above that have been funded and/or approved, there are several other changes that have been proposed and may be implemented by 2010 or 2025. These possible changes include reconfiguration of local roadways near 3Com Park. As proposed by the San Francisco 49ers, the revised roadway configuration would create a "ring-road" around a proposed stadium and mall development, referred to as the Candlestick Point Retail/Entertainment Center, and would constrain and/or reconfigure access via Jamestown Avenue. Upgrading intersections and traffic signals along Harney Way between the freeway and Candlestick Point are also proposed, and the City of Brisbane is advocating construction of a new freeway interchange with an extension of Geneva Avenue and an intermodal station on the Brisbane Baylands parcel. In addition to potentially serving this proposed intermodal station, CalTrain is proposing track rehabilitation projects along its line and may consider relocation of some existing stations.

The Yosemite Slough Bridge project consists of constructing a bridge that would provide an additional access route to HPS from the south. The bridge would connect the HPS South Gate at the Crisp/Griffith intersection to U.S. 101 via traffic corridors along Griffith Street, Hunters Point Parkway, and Harney Way. With construction of the bridge, Carrol Avenue would be extended from Third Street to Bayshore Boulevard to allow access to U.S. 101 at Bayshore Boulevard. This proposal (the bridge and Carrol Avenue extension) is the subject of an ongoing feasibility study but has not yet been programmed in the Regional Transportation Improvement Program (RTIP).

The Port of San Francisco is also studying the feasibility of an additional bridge for rail service across Islais Creek. This bridge is also not funded or programmed at this time.

3.1.4 Plans and Policies

Adopted transportation goals and policies that currently guide the City's transportation development are contained in the various elements and area plans that make up the San Francisco General Plan. Adopted local plans and policies relevant to the transportation element of the Proposed Reuse Plan are described below.

Transportation Element of the City General Plan

The following policies under the City General Plan's Transportation Element are applicable to HPS:

- Give priority to public transit . . . as the means of meeting San Francisco's transportation needs, particularly those of commuters (General Policy 1.3).

- Coordinate regional and local transportation systems and provide for interline transit transfers (General Policy 1.5).
- Provide incentives for the use of transit, carpools, vanpools, walking, and bicycling and reduce the need for new or expanded automobile and automobile parking facilities (General Policy 2.5).
- In conversion and reuse of inactive military bases, provide for a balanced, multi-modal transportation system that is consistent with and complementary to the planned land use and the local and regional transportation system (General Policy 2.6).
- Designate expeditious routes for freight trucks between industrial and commercial areas and the regional and state freeway system to minimize conflicts with automobile traffic and incompatibility with other land uses (Regional Policy 6.1).
- Ensure that the Coast Trail, Bay Trail, and Ridge Trail remain uninterrupted and unobstructed where they pass through San Francisco (Regional Policy 8.1).
- Maintain public transit as the primary mode of transportation in San Francisco and as a means through which to guide future development and improve regional mobility and air quality (Congestion Management, Transit First Objective 11).
- Implement private and public sector Transportation Demand Management (TDM) programs that support each other and explore opportunities for private-public responsibility in program implementation (Transportation Demand Management Policy 12.3).
- Reduce peak period congestion through the promotion of flexible work schedules at work sites throughout the City (Transportation Systems Management Policy 14.6).
- Reduce parking demand through the provision of incentives for the use of carpools and vanpools at new and existing parking facilities throughout the City (Parking Management Policy 16.3).
- Use the Street Hierarchy System of the Transportation Element as the foundation for any national, state, regional, and local network of streets and highways in San Francisco (Vehicle Circulation Policy 18.6).
- Improve inter-district and intra-district transit service (Mass Transit Policy 20.9).

- Provide transit service from residential areas to major employment centers outside the downtown area (Mass Transit Policy 21.1).
- Support pedestrian needs by incorporating them into regular short-range and long-range planning activities for all City and regional agencies, and include pedestrian facility funding in all appropriate funding requests (Pedestrian Policy 23.8).
- Expand and improve access for bicycles on City streets (Bicycles Policy 27.1).
- Identify and expand recreational bicycling opportunities (Bicycles Policy 27.9).
- Support urban goods movement networks in San Francisco, especially in the areas reserved for industrial development and in neighborhood commercial districts (Urban Goods Movement Policy 36.1).
- Establish and maintain advisory truck routes, with clear signage, between industrial areas and freeway interchanges to enhance truck access and to clearly and visibly attract truck traffic away from residential neighborhoods (Urban Goods Movement Policy 39.1).

3.2 AIR QUALITY

This section describes air quality conditions in the HPS vicinity and region. The ROI for air quality varies with the type of air pollution under discussion. Pollutants that are directly emitted (such as carbon monoxide and some particulate matter) have a localized ROI generally restricted to areas in the immediate vicinity of the emission source. Pollutants produced by chemical reactions in the atmosphere (such as ozone and secondary pollutant matter) have an ROI that includes the entire San Francisco Bay Area.

Air quality issues are of particular concern in the Bayview-Hunters Point area because of the assumed link between environmental factors and high incidences of respiratory illnesses (e.g., asthma) and certain types of cancer. Recent health studies conducted by the San Francisco Department of Public Health (DPH) and others have evaluated this neighborhood's high incidences of respiratory and other illnesses (Glazer, et al. 1998; Aragon and Grumbach, 1997). The first study concluded that, for the period 1991 to 1992, neighborhood residents had among the highest hospitalization rates in all age groups in the State of California for asthma, hypertension, congestive heart failure, and diabetes mellitus. The study also showed high rates of cancer, breast cancer mortality, and other causes of death, and concluded that "the poor health status of residents in BVHP [Bayview-Hunters Point neighborhood] reflects, in large part, racial disparities in health status among San Francisco residents." The second study showed that cancer incidence during the 1993 to 1995 period was not meaningfully higher among the neighborhood population than among their counterparts in the rest of the Bay Area. Public concerns regarding human health and potential environmental factors persist, however, and are attributed to the concentration of air polluting industries in the neighborhood.

3.2.1 Climate and Meteorology

Prevailing winds are from the west. Average wind speeds are 7 to 10 mph (11 to 16 km per hour) during the winter and 12 to 14 mph (19 to 22.5 km per hour) during the summer (U.S. Navy, 1994c). Strong winds greater than 20 mph (32 km per hour) occur occasionally in the winter and are common in the summer.

According to location-specific data reported by the California Energy Commission in 1995, winds in the vicinity of HPS blow mostly from the west in March through October and are more variable from November through February. During the latter period, winds blow mostly from the north, southeast and west (CEC, 1995). There is no evidence available to suggest that this area experiences more or less mixing of air and dispersion of air pollutants than other areas of the City.

- 3.2.2 Ambient Air Quality Standards**
- Both the Federal government and the State of California have established air quality standards for various pollutants. Pollutants covered by Federal or state ambient air quality standards often are referred to as criteria pollutants. Table 3.2-1 lists criteria pollutants and ambient standards, which have been set to protect public health, crops, and materials or to avoid exceeding nuisance dust standards.
- In July 1997, the U.S. Environmental Protection Agency (U.S. EPA) promulgated new standards for both ozone and particulate matter. The U.S. EPA's new ozone standard is 0.08 parts per million (ppm), averaged over 8 hours, rather than the previous 0.12 ppm, averaged over 1 hour. Under the new ozone standard, it will be much more difficult for the Bay Area to achieve compliance. The former particulate standards limited concentrations of inhalable particulate matter less than 10 microns in diameter (PM_{10}). Due to increased concern over finer particulate matter being responsible for health impacts, the new standards limit concentrations of inhalable particulate matter 2.5 microns or less in diameter ($PM_{2.5}$). The new standard will be implemented in 2000; the attainment status is being based on 1997, 1998, and 1999 monitoring data.
- 3.2.3 Toxic Air Contaminants**
- Toxic air contaminants are a category of air pollutants that may cause or contribute to an increase in mortality or serious illness or that may pose a present or potential hazard to human health. Adverse health effects of toxic air contaminants may be carcinogenic (cancer-causing), short-term (acute) noncarcinogenic, or long-term (chronic) noncarcinogenic. Several hundred such pollutants are regulated by various Federal, state, and local programs, as described below, but there are no ambient air quality standards for these materials.
- 3.2.4 Existing Air Quality Conditions**
- Ozone, carbon monoxide, and PM_{10} are the air pollutants of greatest local concern and are monitored at a number of locations in the San Francisco Bay Area. The monitoring station closest to HPS is on Arkansas Street between U.S. 101 and I-280, south of Sixteenth Street, approximately 2.5 miles (4 km) northwest of HPS. This station is the major monitoring location for San Francisco, and data from this station can be reliably used to characterize area-wide air quality; more site-specific data for HPS are not available. Carbon monoxide levels in San Francisco are monitored at the Arkansas Street station and at the Bay Area Air Quality Management District (BAAQMD) office on Ellis Street. Table 3.2-2 summarizes recent air quality monitoring data for ozone, carbon monoxide, and PM_{10} . Most of the data shown were collected at the Arkansas Street station; these data are comparable to data collected by Pacific Gas & Electric (PG&E) at its Hunters Point Power Station (California Energy Commission, 1995).

TABLE 3.2-1: AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA

POLLUTANT	SYMBOL	AVERAGING TIME	STANDARD, AS PARTS PER MILLION BY VOLUME		STANDARD, AS MICROGRAMS PER CUBIC METER		VIOLATION CRITERIA	
			CALIFORNIA	NATIONAL	CALIFORNIA	NATIONAL	CALIFORNIA	NATIONAL
Ozone	O ₃	8 Hours 1 Hour	---	0.08 0.12	---	160 235	---	If exceeded by the mean of annual 4 th highest daily values for a 3-year period. If exceeded on more than 3 days in 3 years.
Carbon Monoxide	CO	8 Hours 1 Hour	9.0 20	9 35	10,000 23,000	10,000 40,000	If exceeded. If exceeded.	If exceeded more than 1 day per year. If exceeded more than 1 day per year.
Inhalable Particulate Matter	PM ₁₀	Annual Geometric Mean Annual Arithmetic Mean 24 Hours	---	---	30 ---	---	If exceeded. ---	---
			---	---	---	50	---	If exceeded.
			---	---	50	150	If exceeded.	If exceeded more than 1 day per year.
Fine Particulate Matter	PM _{2.5}	Annual Arithmetic Mean 24 Hours	---	---	---	15 65	---	If exceeded as a 3-year spatial average of data from designated stations. If exceeded by the mean of annual 98 th percentile values over 3 years.
Nitrogen Dioxide	NO ₂	Annual Average 1 Hour	---	0.053 ---	---	100 ---	---	If exceeded. ---
			0.25	---	470	---	If exceeded.	---
Sulfur Dioxide	SO ₂	Annual Average 24 Hours	---	0.03 0.14	---	80 365	---	If exceeded. If exceeded more than 1 day per year.
			0.04	---	105	---	If exceeded.	---
			0.25	---	655	---	If exceeded.	---
Lead particles	Pb	1 Hour Calendar Quarter 30 Days	---	---	---	1.5 ---	If equalled or exceeded.	If exceeded more than 1 day per year.

TABLE 3.2-1: AMBIENT AIR QUALITY STANDARDS APPLICABLE IN CALIFORNIA
(CONTINUED)

POLLUTANT	SYMBOL	AVERAGING TIME	STANDARD, AS PARTS PER MILLION BY VOLUME		STANDARD, AS MICROGRAMS PER CUBIC METER		VIOLATION CRITERIA	
			CALIFORNIA	NATIONAL	CALIFORNIA	NATIONAL	CALIFORNIA	NATIONAL
Sulfate Particles	SO ₄	24 Hours	---	---	25	---	If equaled or exceeded.	---
Hydrogen Sulfide	H ₂ S	1 Hour	0.03	---	42	---	If equaled or exceeded.	---
Vinyl Chloride	C ₂ H ₃ Cl	24 Hours	0.010	---	26	---	If equaled or exceeded.	---

Source: California Air Resources Board, 1991. State and National Ambient Air Quality Standards (ARB Fact Sheet 39). Title 40 of the Code of Federal Regulations (C.F.R.) § 50, 53, and 58.

Notes:

All standards except the national PM₁₀ and PM_{2.5} standards are based on measurements corrected to 25 degrees C and 1 atmosphere pressure. The national PM₁₀ and PM_{2.5} standards are based on direct flow volume data without correction to standard temperature and pressure. Decimal places shown for standards reflect the rounding precision used for evaluating compliance. Except for the 3-hour sulfur dioxide standard, the national standards shown are the primary (health effects) standards. The national 3-hour sulfur dioxide standard is a secondary (welfare effects) standard. EPA adopted new ozone and particulate matter standards on July 18, 1997; the new standards became effective on September 16, 1997. The national 1-hour ozone standard will be rescinded for an area when U.S. EPA determines that the standard has been achieved in that area. Previous national PM₁₀ standards (which had different violation criteria than the September 1997 standards) will remain in effect for existing PM₁₀ nonattainment areas until U.S. EPA takes actions required by Section 172(e) of the Clean Air Act or approves emission control programs for the relevant PM₁₀ state implementation plan. Violation criteria for all standards except the national annual standard for PM_{2.5} are applied to data from individual monitoring sites. Violation criteria for the national annual standard for PM_{2.5} are applied to a spatial average of data from one or more community-oriented monitoring sites representative of exposures at neighborhood or larger spatial scales (40 CFR § 58). The "10" in PM₁₀ and the "2.5" in PM_{2.5} are not particle size limits; these numbers identify the particle size class (aerodynamic equivalent diameters in microns) collected with 50 percent mass efficiency by certified sampling equipment. The maximum particle size collected by PM₁₀ samplers is about 50 microns aerodynamic equivalent diameter; the maximum particle size collected by PM_{2.5} samplers is about 6 microns aerodynamic equivalent diameter (40 CFR § 53).

**TABLE 3.2-2: SUMMARY OF RECENT AIR QUALITY MONITORING DATA
FOR SAN FRANCISCO**

MONITORING STATION	PARAMETER	1991	1992	1993	1994	1995	1996
OZONE							
San Francisco -	Peak 1-hour value (ppm)	0.05	0.08	0.08	0.06	0.09	0.07
Arkansas St.	Days above Federal standard	0	0	0	0	0	0
	Days above state standard	0	0	0	0	0	0
CARBON MONOXIDE							
San Francisco -	Peak 1-hour value (ppm)	9.0	8.0	7.0	6.0	5.0	5.0
Arkansas St.	Peak 8-hour value (ppm)	6.5	6.4	5.1	4.5	4.4	3.9
	Days above Federal standard	0	0	0	0	0	0
	Days above state standard	0	0	0	0	0	0
San Francisco -	Peak 1-hour value (ppm)	14.0	10.0	10.0	8.0	9.0	9.0
Ellis St.	Peak 8-hour value (ppm)	8.4	7.4	6.9	5.4	5.5	5.6
	Days above Federal standard	0	0	0	0	0	0
	Days above state standard	0	0	0	0	0	0
INHALABLE PARTICULATE MATTER (PM₁₀)							
San Francisco -	Peak 24-hour value (µg/m ³)	109	81	69	93	50	71
Arkansas St.	Annual geometric mean (µg/m ³)	29.7	27.6	25.1	24.7	22.1	21.4
	Annual arithmetic mean (µg/m ³)	34.9	31.6	28.8	28.0	24.9	24.3
	Number of 24-hour samples	60	61	61	61	61	61
	% of samples above Federal standard	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	% of samples above state standard	25.0%	14.8%	8.2%	9.8%	0.0%	3.3%

Source: California Air Resources Board, 1991, 1992, 1994, 1994, 1995, 1996.
Bay Area Air Quality Management District, 1994.

Notes: ppm = parts per million by volume.
µg/m³ = micrograms per cubic meter.
Based on Federal 1-hour ozone standard of 0.12 ppm; state 1-hour ozone standard of 0.09 ppm.
Federal 1-hour carbon monoxide standard is 35 ppm; state 1-hour carbon monoxide standard is 20 ppm.
Federal 8-hour carbon monoxide standard is 9 ppm; state 8-hour carbon monoxide standard is 9.0 ppm.
Federal PM₁₀ standards: 50 µg/m³, annual arithmetic mean; 150 µg/m³, 24-hour average.
State PM₁₀ standards: 30 µg/m³, annual geometric mean; 50 µg/m³, 24-hour average.

Table 3.2-2 indicates that Federal and state standards for ozone and carbon monoxide were not violated in San Francisco between 1991 and 1996. However, ozone standard violations occurred in other portions of the San Francisco Bay Area in 1995 and 1996. The Federal PM₁₀ standard was not exceeded in San Francisco between 1991 and 1996, but the more stringent state PM₁₀ standards were exceeded at the Arkansas Street station several times each year (except in 1995). Current air quality standards for particulate matter are based on the inhalable component of suspended PM₁₀.

3.2.5 Existing Emission Sources at Hunters Point Shipyard

The Navy has not operated any stationary emission sources at HPS since 1974, and all Navy air permits have been terminated (U.S. Navy, 1998e). Current operations by tenants include the work of environmental testing laboratories, storage facilities and vehicle storage, cabinet making, paint booths, refrigeration, manufacturing, auto body work, scrap metal recycling, and other work. A list of current HPS tenants is presented in Appendix C.

Most existing tenant uses at HPS are not significant sources of emissions. Only one tenant, Astoria Metals Corporation at Drydock 4, conducts activities requiring a BAAQMD Permit to Operate (PTO). HPS tenants have responsibility for obtaining all required permits from the BAAQMD.

In addition to permitted stationary emission sources, diesel trucks and other vehicles operating at HPS contribute to carbon monoxide, nitrogen oxides (NO_x), sulfur oxides (SO_x), and PM₁₀ emissions.

3.2.6 Plans and Policies***Federal Requirements***

The Federal Clean Air Act (CAA), as amended, 42 United States Code (U.S.C.) § 7401 *et seq.*, requires each state to develop, adopt, and implement a state implementation plan (SIP) to achieve, maintain, and enforce Federal air quality standards. These plans must be submitted to and approved by the U.S. EPA. In California, the SIP consists of separate elements for different regions of the state. SIP elements generally are developed on a pollutant-by-pollutant basis whenever an air quality standard is being violated.

Local councils of government and air pollution control districts have had the primary responsibility for developing and adopting the regional elements of the California SIP. In the San Francisco Bay region, SIP document preparation has been a coordinated effort involving three regional agencies: the BAAQMD, Association of Bay Area Governments (ABAG), and Metropolitan Transportation Commission (MTC). The regional component of the California SIP document for the San Francisco Bay Area is commonly known as the Bay Area Clean Air Plan.

The CAA imposes deadlines for achieving the Federal ambient air quality standards. These deadlines vary according to the severity of air quality problems. The San Francisco Bay Area was reclassified in July 1998 from a maintenance area to a nonattainment area for the Federal one-hour ozone standard (nonattainment areas are areas that violate Federal or state ambient air quality standards, whereas maintenance areas are areas that maintain Federal or state air quality standards). This classification will last into 2000. In April 1998, the Bay Area was redesignated to attainment for the Federal eight-hour

carbon monoxide standard. The Bay Area is currently designated as unclassified for the Federal PM₁₀ standard.

Section 176(c) of the CAA, 42 U.S.C. § 7506(c), requires Federal agencies to comply with the CAA and with Federally enforceable air quality management plans. The U.S. EPA has enacted separate rules that establish conformity analysis procedures for highway and mass transit projects and for other (general) Federal agency actions.

A formal conformity determination is required for Federal actions in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. Federal nonattainment and maintenance pollutants subject to conformity analysis in the San Francisco Bay Area are ozone precursors (reactive organic compounds and NO_x) and carbon monoxide. Applicable threshold levels for Federal actions in the San Francisco Bay Area are 100 tons (91 metric tons) per year of reactive organic compounds, 15 tons (14 metric tons) per year of NO_x or 80 pounds (36 kg) per day, and 100 tons (91 metric tons) per year of carbon monoxide (BAAQMD, 1996).

Federal actions, such as transfers of ownership, interests, and titles in land, facilities, real property, or personal property, to other non-Federal public agencies are exempt from the U.S. EPA's general conformity rule, because such actions are presumed to result in emissions below the threshold level. This is because the agency transferring the property does not retain responsibility or control over subsequent activities. The proposed Navy disposal of HPS falls under this exemption.

State Requirements

Air pollution control programs were established in California in the late 1940s to early 1950s before the enactment of Federal requirements. Responsibility for air quality management programs in California is divided between the California Air Resources Board (CARB), the primary state air quality management agency, and air pollution control districts, the primary local air quality management agencies. CAA legislation in the 1970s resulted in a gradual merger of local and Federal air quality programs, particularly industrial source air quality permit programs.

The roles and responsibilities of both CARB and local air pollution control districts were expanded by the California Clean Air Act of 1988, 26 California Health & Safety Code § 10000, *et seq.* This act adopted transportation control measure programs and emission reduction programs for indirect and area-wide emission sources. Local air pollution control districts have been given added

responsibility and authority to adopt transportation control measure programs and emission reduction programs for indirect and area-wide emission sources.

The California Clean Air Act requires air pollution control districts and air quality management districts to develop air quality management plans for meeting state ambient air quality standards for ozone, carbon monoxide, sulfur dioxide, and nitrogen dioxide. CARB is responsible for developing a plan for meeting state PM_{10} standards.

Under the California Clean Air Act, attainment is required "as expeditiously as practicable," with mandated emission control program requirements based on the nonattainment classification for ozone and carbon monoxide. The entire San Francisco Bay Area is classified as a moderate nonattainment area for the state ozone standard and as an attainment area for state carbon monoxide standards.

Air Quality Permits

Some industrial and commercial facilities require air quality permits for equipment and operations. The BAAQMD has the primary air quality permit authority throughout the San Francisco Bay Area. CARB has oversight authority over the BAAQMD. In cases involving Federal actions, U.S. EPA has oversight authority over BAAQMD. Permits are categorized as construction or installation authorizations for individual pieces of equipment or as permits for continued operation of equipment and facilities.

Federally required air quality permit programs are integrated into the state and local permit programs. This results in a two-step permit process: an initial authority to construct (ATC) permit and a subsequent PTO.

Toxic Air Contaminants

Stationary Sources

Federal Requirements. Under Title III of the 1990 CAA, the number of regulated toxic substances was expanded to 189 compounds. The U.S. EPA was directed to develop standards for toxic air pollutants, including consideration of economic issues in the control criteria, and to investigate the exposure risk from toxic air contaminants in urban areas.

State Requirements. CARB is responsible for identifying specific toxic air contaminants through research and evaluation. Assembly Bill (AB) 2728 mandated state recognition of the 189 toxic air contaminants identified by the 1990 CAA amendments. The Air Toxics "Hot Spots" Information and Assessment Act, California Health and Safety Code

§ 44300 *et seq.*, required that toxic risk assessments include the toxic air contaminants specified in the Risk Assessment Guidelines of the California Air Pollution Control Officers Association (CAPCOA). CARB has identified over 729 toxic air contaminants (including the 189 Federal hazardous air pollutants) as part of the “Hot Spots” Act.

Air Quality Permits. BAAQMD’s current risk management policy requires that any incremental increase in emissions of toxic air contaminants from new or modified stationary sources be evaluated for human health impacts, especially cancer risk, using the CAPCOA guidelines. Some sources may be exempt if emissions of toxic air contaminants are below certain annual emission levels set by the BAAQMD.

The BAAQMD risk criteria allow a permit to be granted for a new or modified stationary source if the source meets either of the following health impact criteria:

- The estimated incremental cancer risk from the project is less than one in one million, and the noncancer risk is below U.S. EPA’s guidance levels.
- The estimated cancer risk is less than ten in one million, the noncancer risk is less than U.S. EPA’s guidance levels, and Best Available Control Technology for toxics will be applied.

The BAAQMD may deny the permit if the estimated cancer risk is greater than ten in one million or the noncancer risk is greater than U.S. EPA’s guidance levels.

Mobile Sources

Vehicles emit toxic air contaminants, including benzene, polycyclic aromatic hydrocarbons, and formaldehyde. Currently, there is no regulatory guidance or scientific consensus for determining the significance of toxic air contaminant emissions from mobile sources. Modeling toxic air contaminant emissions from mobile sources is rarely undertaken due to its difficulty and complexity. There are no control requirements for toxic air contaminant emissions from mobile sources, except for lead. Lead was one of the first hazardous air pollutants to receive national attention in the 1970s. Since lead emissions can be extremely toxic, National Ambient Air Quality Standards (NAAQS) were developed to reduce the public’s exposure under the CAA; therefore, lead has the dual distinction of being a criteria pollutant and a hazardous air pollutant/toxic air contaminant.

As new fuels are developed or other measures are implemented to reduce criteria pollutants, it is likely that toxic air contaminant

emissions will decrease. Emission control measures for mobile sources typically have focused on vehicle emissions, fuel efficiency standards, and, more recently, on reformulation of fuels.

Local Policies

A new Air Quality Element of the San Francisco General Plan was adopted in July 1997. Air quality objectives of this element include the following:

- Adhere to state and Federal air quality standards and regional programs (Objective 1).
- Reduce mobile sources of air pollution through implementation of the transportation element of the General Plan (Objective 2).
- Decrease the air quality impacts of development by coordinating land use and transportation decisions (Objective 3).
- Improve air quality by increasing public awareness regarding the negative health effects of pollutants generated by stationary and mobile sources (Objective 4).
- Minimize particulate matter emissions from road and construction sites (Objective 5).
- Link the positive effects of energy conservation and waste management to emission reductions (Objective 6).

3.3 NOISE

This section describes the noise conditions and applicable regulations for noise impacts at HPS. Due to the attenuation of noise levels with distance from the noise source, the ROI is the South Bayshore planning area. A more localized ROI is appropriate for some discrete noise sources. Such localized areas of influence are generally within 0.5 miles (0.8 km) of a noise source (California Department of Health Services, 1987).

3.3.1 Noise Measurements

Most sounds consist of a broad range of sound frequencies. Because the human ear is not equally sensitive to sound at all frequencies, noise is measured using the "A-weighted" decibel scale (dBA), which estimates the way the human ear responds to noise levels.

Average noise exposure over a 24-hour period is presented as a day-night average sound level (Ldn) or a Community Noise Equivalent Level (CNEL). Ldn values are calculated from hourly equivalent noise level (Leq) values, with the Leq values for the nighttime period (10:00 P.M. to 7:00 A.M.) increased by 10 decibels (dB) to reflect the greater disturbance potential from nighttime noises. Leq values are used to develop single-value descriptions of average noise exposure over various periods. CNEL values are very similar to Ldn values but include a 5-dB annoyance adjustment for evening Leq values (7:00 P.M. to 10:00 P.M.) in addition to the 10-dB adjustment for nighttime Leq values (City and County of San Francisco, Planning Department, 1995a).

3.3.2 Noise Conditions

The noise environment of the South Bayshore planning area is dominated by transportation noise sources, with highway traffic and aircraft overflights being the major contributors. Commuter rail operations and limited freight service contribute to background noise levels in areas adjacent to the CalTrain tracks.

While no current measurements of noise levels at HPS are available, the Environmental Protection Element of the San Francisco General Plan, adopted in 1974, indicates that background Ldn levels at HPS are about 55 dB. Adjacent residential and commercial areas have somewhat higher background noise levels, with average Ldn levels of about 60 dB.

Noise monitoring was conducted along Third Street in the Bayview-Hunters Point area in July 1997 (U.S. Department of Transportation, Federal Transit Administration, and the City and County of San Francisco, Planning Department, 1998). The noise data indicate existing noise exposure to be relatively high along the Third Street corridor due to traffic on Third Street and other heavily traveled

arterials. The Ldn for the segment of the Third Street corridor between the U.S. 101 overcrossing and Thomas Avenue was estimated at between 70 and 77 dBA. Ldn for the Third Street segment between Thomas Avenue and Jerrold Avenue was estimated at between 73 and 76 dBA. Noise at buildings one row behind Third Street was assumed to be 10 dB lower than along Third Street (U.S. Department of Transportation, Federal Transit Administration, and the City and County of San Francisco, Planning Department, 1998).

3.3.3 Plans and Policies

State Agency Guidelines

The California Department of Housing and Community Development has adopted noise insulation performance standards for new hotels, motels, and dwellings other than detached single-family structures. These standards (24 California Administration Code [Cal. Admin. Code] T25-28) require that hotels, motels, and multiple-unit dwellings be constructed so that outdoor noise sources do not cause interior noise levels to exceed an annual average CNEL value of 45 dB with the windows closed.

The California Department of Health Services (1987) has published guidelines for the noise element of local general plans. These guidelines include a noise level/land use compatibility chart that places various outdoor Ldn ranges into one of four compatibility categories (normally acceptable, conditionally acceptable, normally unacceptable, and clearly unacceptable), depending on land use.

The California noise element guidelines chart identifies normally acceptable noise levels for low-density residential uses as Ldn values below 60 dB. The normally acceptable range for high-density residential uses is identified as Ldn values below 65 dB. For educational and medical facilities, Ldn values of 60 to 70 dB are identified as conditionally acceptable. For office and commercial land uses, Ldn values of 67.5 to 77.5 are categorized as conditionally acceptable. The distinction between normally and conditionally acceptable ranges is that under normally acceptable ranges, there are no conditions attached, and under conditionally acceptable ranges, conditions are attached.

Noise Element of the San Francisco General Plan

The Noise Element of the San Francisco General Plan is contained in the Environmental Protection Element. The Noise Element focuses on transportation noise as the major noise source in San Francisco and contains land use compatibility guidelines consistent with state guidelines described above. Noise Element objectives and supporting policies that are potentially relevant to HPS include the following:

- Reduce transportation-related noise (Objective 9).
 - ◊ Retain and expand the electric trolley network (Policy 5).
 - ◊ Discourage changes in streets that will result in greater traffic noise in noise-sensitive areas (Policy 6).
- Minimize the impact of noise on affected areas (Objective 10).
 - ◊ Promote site planning, building orientation and design, and interior layout that will lessen noise intrusion (Policy 1).
 - ◊ Promote the incorporation of noise insulation materials in new construction (Policy 2).
 - ◊ Construct physical barriers to reduce noise transmission from heavy traffic carriers (Policy 3).
- Promote land uses that are compatible with various transportation noise levels (Objective 11).
 - ◊ Discourage new uses in areas in which the noise level exceeds the noise compatibility guidelines for that use (Policy 1).
 - ◊ Consider relocating to more appropriate areas those land uses that need more quiet and cannot be effectively insulated from noise in their present location, as well as those land uses that are noisy and are presently in noise-sensitive areas (Policy 2).
 - ◊ Locate new noise-generating development so that the noise impact is reduced (Policy 3).

San Francisco Noise Ordinance

In addition to general policy guidance provided by the Noise Element of the General Plan, San Francisco has adopted a noise ordinance (Article 29 of the Police Code) to regulate noise from fixed sources, portable equipment, garbage collection equipment, construction activities, motor vehicle operation when not on a public street or highway, and other sources of unnecessary, excessive, or offensive noise. The noise ordinance contains general nuisance abatement provisions and specific noise limitations that vary by zoning district, time of day, and type of noise source. The general noise limitations specified in the noise ordinance are summarized in Table 3.3-1. The noise ordinance contains exemptions for emergency work, emergency and safety signaling devices, and various types of impact tools, pavement breakers, and jackhammers. In addition, the ordinance provides for a variance process and a permit process for nighttime construction work.

**TABLE 3.3-1: SUMMARY OF NOISE LIMITS ESTABLISHED IN THE
SAN FRANCISCO NOISE ORDINANCE**

NOISE SOURCE	APPLICABLE ZONING DISTRICT	TIME PERIOD	NOISE LIMITS
Construction Equipment and Activities	All Zoning Districts	7 A.M. - 8 P.M.	80 dBA at 100 feet (30 m); limit does not apply to impact tools/equipment
		8 P.M. - 7 A.M.	5 dBA above ambient at property line without special permit
Solid Waste Collection Equipment	All Zoning Districts	Any time	75 dBA at 50 feet (15 m)
Off-highway Vehicle Use	Public Zones	Any time	70 dBA at 50 feet (15 m)
Off-highway Vehicles			82 dBA at 50 feet (15 m)
Heavy Duty Vehicles			77 dBA at 50 feet (15 m)
Motorcycles			74 dBA at 50 feet (15 m)
Other Highway Vehicles			74 dBA at 50 feet (15 m)
Fixed Noise Sources	Low- and Medium-Density Residential Zones	7 A.M. - 10 P.M.	55 dBA at property line
		10 P.M. - 7 A.M.	50 dBA at property line
	High-Density Residential, Neighborhood Commercial, and Residential Commercial Zones	7 A.M. - 10 P.M.	60 dBA at property line
		10 P.M. - 7 A.M.	50 dBA at property line
	Commercial Zones	7 A.M. - 10 P.M.	70 dBA at property line
		10 P.M. - 7 A.M.	60 dBA at property line
	Light Industrial Zones	Any time	70 dBA at property line
	Heavy Industrial Zones	Any time	75 dBA at property line
Engine-powered Model Vehicle Use	Low- and Medium-Density Residential Zones	7 A.M. - 10 P.M.	55 dBA at 50 feet (15 m)
		10 P.M. - 7 A.M.	50 dBA at 50 feet (15 m)
	High-Density Residential, Neighborhood Commercial, and Residential Commercial Zones	7 A.M. - 10 P.M.	60 dBA at 50 feet (15 m)
		10 P.M. - 7 A.M.	50 dBA at 50 feet (15 m)
	Commercial Zones	7 A.M. - 10 P.M.	70 dBA at 50 feet (15 m)
		10 P.M. - 7 A.M.	60 dBA at 50 feet (15 m)
	Light Industrial Zones	Any time	70 dBA at 50 feet (15 m)
	Heavy Industrial Zones	Any time	75 dBA at 50 feet (15 m)
	Public Zones	Any time	80 dBA at 50 feet (15 m)
			80 dBA at 50 feet (15 m)

Source: San Francisco Police Code, Article 29.

3.4 LAND USE

This section describes existing HPS and surrounding land uses and applicable land use plans and policies. The ROI for the land use analysis is HPS and the South Bayshore planning area. Land use categories within the ROI are identified on Figure 3.4-1; prominent land use categories at HPS are identified on Figure 3.4-2.

3.4.1 HPS Land Use

HPS occupies approximately 936 acres (379 ha), 493 acres (200 ha) of which are on dry land and 443 acres (179 ha) under water (U.S. Navy, 1994c). About 40 percent of HPS is used today, including less than a fifth of its waterfront. The structures at HPS reflect its history as a heavy industrial naval shipyard (Figure 3.4-3). Until its closure in 1974, HPS was used for ship-related industrial activities, with ancillary storage, administration, and institutional uses. Military family housing, along with bachelor quarters, also was provided at HPS. In 1976, the land was leased to Triple A Machine Shop, which, until the termination of the lease in 1986, subleased facilities to a variety of tenants.

The following description of HPS land use includes occupied and unoccupied buildings, as well as open space areas along the southern edge of HPS, in the hillside area, and near the main entrance. Areas between buildings generally are paved for parking or storage. Access at HPS is restricted and not available to the general public. Tenants and contractors obtain access through the Navy security office.

Industrial

Industrial and related uses at HPS occupy 56 buildings and include storage and trucking, light manufacturing, construction storage and shops, cabinetmaking and woodworking, testing laboratories, scrap metal recycling, an auto body shop, and vehicle storage by the San Francisco Police Department. One lessee, the Golden Gate Railroad Museum, uses two buildings and a small railroad sorting yard for restoring and displaying historic trains. There are two maritime businesses among the industrial users, including a marine rigger and a marine and industrial cleaning service (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1994). The Astoria Metal Corporation operates on 16.1 acres (6.5 ha) for industrial ship dismantling at and around Drydock 4 (City and County of San Francisco, Planning Department, 1995d).

Berthing space at HPS consists of a varying configuration of piers, quay walls, and wharves; there are also repair berths. The quay wall at Point Avisadero (northeast corner of HPS), North and South Piers, and the Regunning Pier are the primary berthing areas. Smaller piers

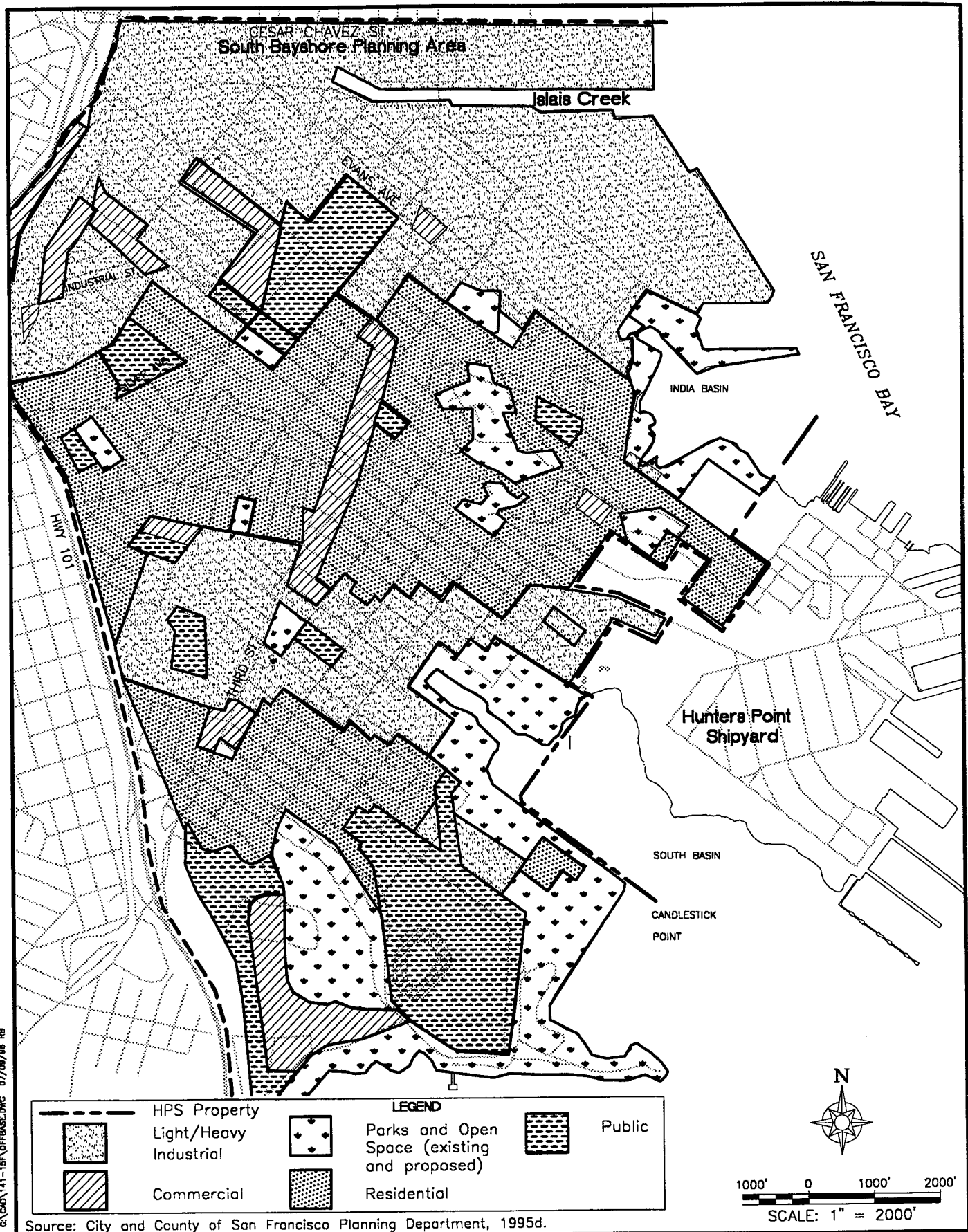


Figure 3.4-1: Existing South Bayshore Planning Area Land Use

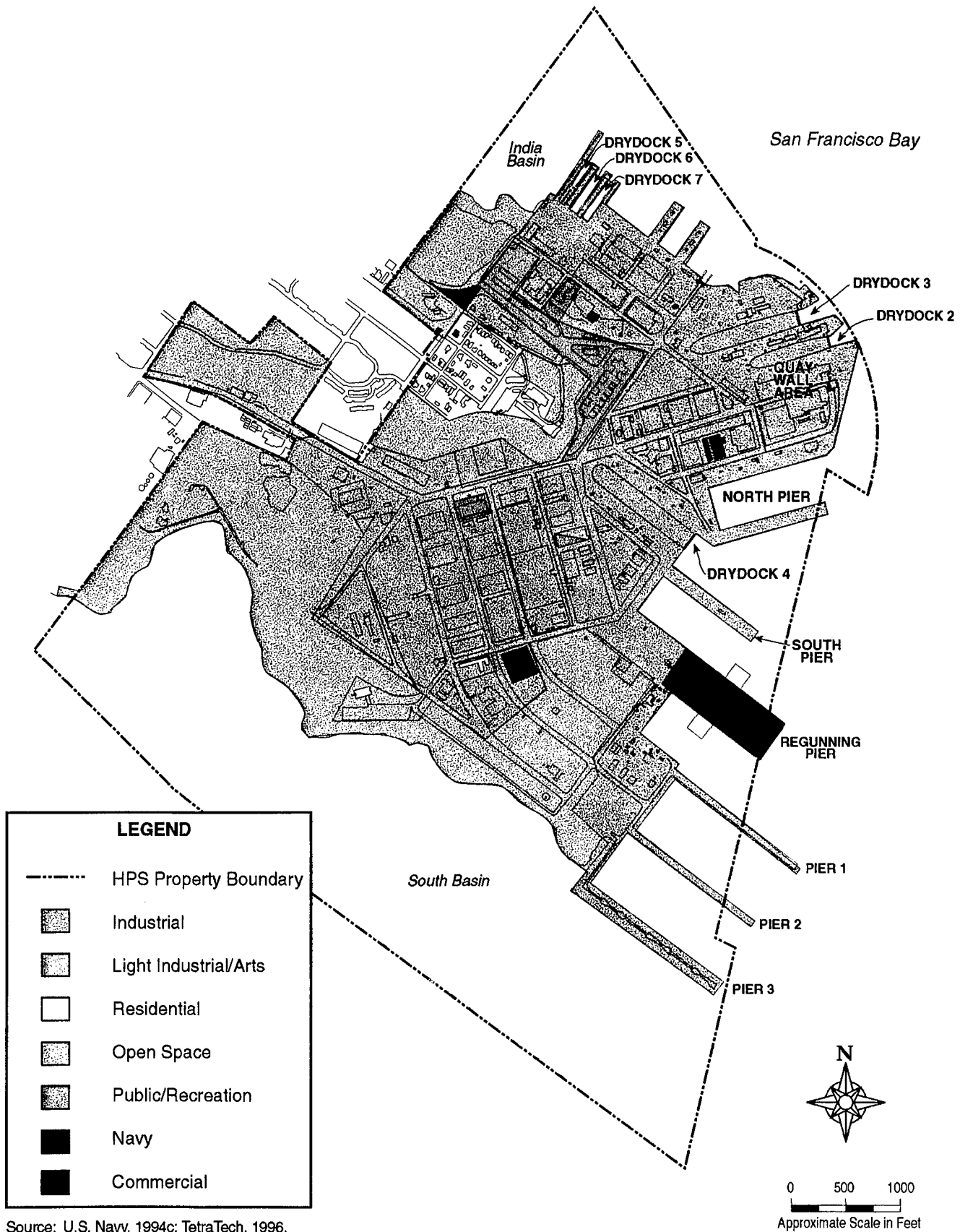


Figure 3.4-2: Existing Land Uses

on the India Basin frontage supplement these berths. An additional 18 berths are at 3 piers in the southernmost portion of HPS.

There are six drydocks of varying sizes at HPS. The largest are Drydocks 2, 3, and 4, with three smaller drydocks along the India Basin frontage (Figure 3.4-2). The smaller drydocks were used historically for submarine maintenance (City and County of San Francisco, Planning Department and San Francisco Redevelopment Agency, 1994).

Light Industrial/Arts

Light industrial/artist uses occupy Buildings 101, 103, 104, 110, 115, 116, 117, 323, 366, 401, and 435. There are 3 main leases for 561 studios used by 793 tenant-artists (City and County of San Francisco, Planning Department and San Francisco Redevelopment Agency, 1994). Most of the studios are under 1 lease that covers 8 buildings with 559 individual studio spaces. Through additional subleases, the studios are further divided into 789 artist spaces. Two other buildings are leased for studios, and each of those lessees has one subtenant (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1994; City and County of San Francisco, Planning Department, 1995d). Buildings 115 and 116 are leased for woodworking and picture framing (U.S. Navy, 1998e).

Residential

There are four residential housing sites at HPS shown on Figure 3.4-2. These housing areas have not been used since 1974 and are deteriorated and uninhabitable. The first residential site, in the north-central portion of HPS, includes one five-unit apartment building (Building 19). The second site includes 43 single-family residences and a 4-story bachelor officers building (Building 921) on the hill in the central portion of HPS (U.S. Navy, 1994c). Building 901, also in this area, is an institutional dining hall formerly used for Navy officers (U.S. Navy, 1994c). The third residential site is Building 500, the former Chief Petty Officers barracks. The fourth site, the bachelor enlisted quarters (Building 600), is a 10-story concrete structure in the south-central portion of HPS (U.S. Navy, 1994c). All residential areas at HPS are vacant.

Open Space

Undeveloped open space areas at HPS are shown on Figure 3.4-2 and include sites never developed and sites where development has been demolished. The largest area of undeveloped open space is along the southern shoreline of HPS, across from the Candlestick Point State Recreation Area. This area was created by fill in the 1940s and includes the former industrial landfill site (U.S. Navy, 1994c).

A smaller open space area is the undeveloped grassy edge of the hillside that separates the lower level of HPS from the upper hillside residential area. This area was created by cut and fill operations during HPS construction and, because of steep, unstable soil conditions, has never been developed. The western area of the hillside, on the south side of Hunters Point Hill, includes a former residential area that was demolished in the 1960s. Roads and housing unit foundations are still present in this area. At the northern entrance to HPS is the site of a former trailer park once used by employees of Triple A Machine Shop. The pavement is in poor condition, with numerous cracks and weeds covering much of the area (U.S. Navy, 1994c). There are no public access routes or recreational amenities in these areas.

Public/Recreation

Building 120, a recreational facility leased by the San Francisco Police Athletic Club, is the only building available for recreational uses at HPS and is used for physical fitness training by police officers (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1994).

Navy/Administration

The Navy uses the sentry house, pass office, and caretakers office (Buildings 158, 322, and 383), office and warehouse space (Buildings 270 and 271), and the firehouse in Building 215. The electrical substation in Building 229 is maintained by the Navy (U.S. Navy, 1998e).

Commercial/Other

Dago Mary's, a restaurant, leases Building 916 near the main entrance. The San Francisco Police Department (SFPD) special operations uses Building 606 (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1994). A San Francisco Redevelopment Agency (Agency) site office is located in Building 915.

3.4.2 Surrounding Land Uses

The area surrounding HPS is identified as the South Bayshore planning area in the San Francisco General Plan (see Figure 3.4-1). Land uses in this area include light/heavy industrial, residential, parks and open space, public, and commercial.

Light/Heavy Industrial

A graded undeveloped area zoned for industrial use is north of HPS between Innes Avenue and India Basin. A small boat repair yard and marina lie just northeast of the undeveloped area, and there is a short commercial strip along the south side of Innes Avenue. Beyond India Basin, the northern industrial area includes the Port of San Francisco's

South Container Terminal (Piers 92-94), the Port's Intermodal Container Transfer Facility (ICTF), India Basin Industrial Park, and a PG&E electrical generating plant. Most of the area south of HPS near South Basin is zoned industrial and contains a mix of small manufacturing, distribution, and warehouse uses and a UCSF animal care facility.

Residential

Low-density, predominantly single-family residential neighborhoods are next to the western edge of HPS. Higher density housing is immediately northwest of the main entrance area (Figure 3.4-1). North of Bayview Hill and Candlestick Point State Recreation Area are other low-density residential areas. In Executive Park at Candlestick Point, 600 residential units are planned and are under construction (as of October 1998).

Parks and Open Space

There are several public parks and open spaces in the South Bayshore planning area, as shown on Figure 3.4-1. Candlestick Point State Recreation Area, southwest of HPS, consists of undeveloped open space and a developed park. There are approximately 13 neighborhood parks and playgrounds within the South Bayshore planning area, primarily east of Third Street.

The Bay Trail is proposed to run south along Third Street and then continue east to Yosemite, Carroll, and Gilman Avenues before connecting with an established section of the Bay Trail in the Candlestick Point State Recreation Area. Additional sections of the Bay Trail are proposed toward the north side of HPS in the vicinity of India Basin. These proposed sections would extend an existing portion of the trail that ends at Innes Avenue and Hunters Point Boulevard southeast along Innes Avenue to Earl Street and would provide access to India Basin at the northeast terminus of Earl Street (ABAG, 1998b).

At Pier 98, on the north side of India Basin, the Port of San Francisco is undertaking a wetland restoration project. The completed project will include up to 5 acres (2 ha) of new wetlands and improved public access to the 25-acre (10-ha) site for fishing, hiking, and wildlife viewing (City and County of San Francisco, Planning Department, 1997b).

Commercial

Neighborhood-commercial establishments are concentrated along a central stretch of Third Street (Figure 3.4-1). Other commercial areas include the Bayshore Boulevard retail area north of Industrial Way, the Jerrold Avenue produce market, and the office park south of

Bayview Hill at Executive Park. Intensification of this commercial area at Executive Park is planned, along with commercial development in the Candlestick Point special use district enacted by San Francisco voters in June 1997.

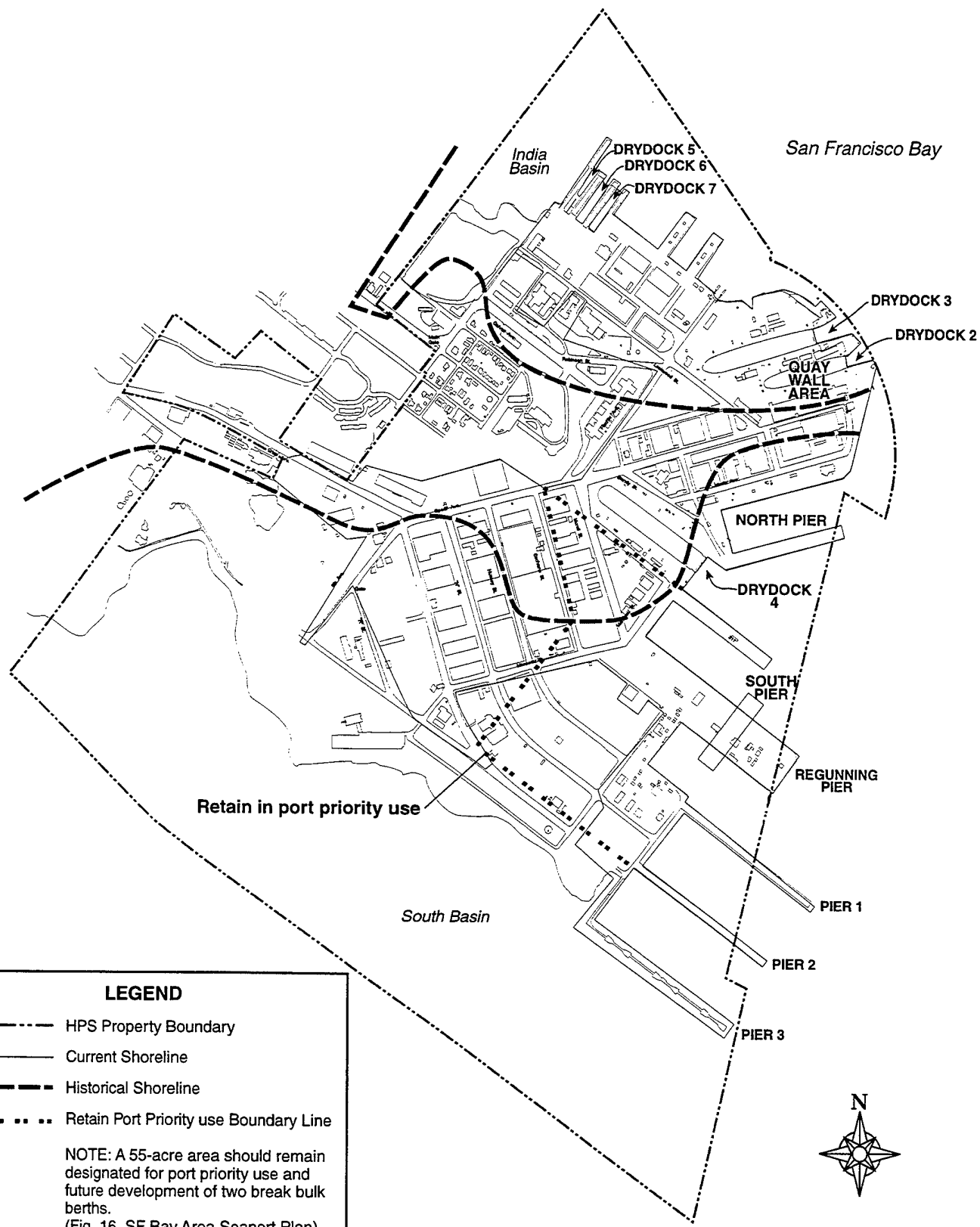
3.4.3 Plans and Policies

Coastal Zone Management

The authority to evaluate projects conducted, funded, or permitted by the Federal government is granted to coastal states through the Federal Coastal Zone Management Act (CZMA) of 1972, 16 U.S.C. § 3501 *et seq.*, as amended. Under the CZMA, any Federal projects or activities must be consistent to the maximum extent practicable with the provisions of Federally approved state coastal plans, 16 U.S.C. 1456, CZMA § 307 (c)(1). The coastal management plan for the east side of San Francisco consists of the McAteer-Petris Act, California Public Resources (Cal. Pub. Res.) Code § 66600 *et seq.*, the Bay Plan (Bay Conservation and Development Commission [BCDC], 1969, revised 1997), the Seaport Plan (BCDC and MTC, 1996), and local management programs. Under the approved coastal management program, 55 acres (22 ha) in the southeast portion of HPS are designated as a port priority use area. Figure 3.4-4 shows the Seaport Plan designation for HPS.

A consistency determination is required under the CZMA to ensure that the Navy's disposal of HPS is consistent with the BCDC management program (BCDC, 1998). The consistency determination will be submitted by the Navy and completed before the Record of Decision (ROD) under the National Environmental Policy Act (NEPA) is issued. Following HPS disposal, projects within BCDC's jurisdiction may require additional BCDC permits.

A portion of HPS land (approximately 238 acres [96 ha]) is subject to the Public Trust, which applies to land that was formerly tideland or under navigable waters at the time California became a state. Figure 3.4-4 shows the historical shoreline of HPS. Generally, the California State Lands Commission (SLC) has jurisdiction over ungranted tidelands and submerged lands owned by the state and the beds of navigable rivers, streams, bays, estuaries, and inlets within its boundaries, Cal. Pub. Res. Code § 6301. These lands are held in trust by the state for the benefit of the public and must be used for purposes consistent with the Public Trust, such as maritime commerce, navigation, fishing, or environmental and recreational purposes. The SLC and the Agency are working to complete a land exchange at HPS. When HPS is no longer Federal property, it is anticipated that the Public Trust will be terminated on inland property no longer needed for Public Trust purposes. In exchange, lands that are near or along



LEGEND

- HPS Property Boundary
- Current Shoreline
- Historical Shoreline
- ... Retain Port Priority use Boundary Line

NOTE: A 55-acre area should remain designated for port priority use and future development of two break bulk berths.
(Fig. 16, SF Bay Area Seaport Plan)



0 500 1000
Approximate Scale in Feet

Source: U.S. Navy, 1994c.

the water and of equal value and not now subject to the Public Trust will be made trust lands. The SLC and the Agency are expected to enter into a memorandum of understanding describing the steps and approvals to complete the exchange (SLC, 1998).

Bay Conservation and Development Commission

BCDC was created in 1965 under the McAteer-Petris Act as a permanent San Francisco Bay management and regulatory agency. BCDC functions as the state coastal management agency for San Francisco Bay, having jurisdiction over all areas subject to tidal action up to the mean high tide line and including all sloughs, marshlands lying between the mean high tide and 5 feet (1.5 m) above mean sea level, tidelands, and submerged lands. Its shoreline band jurisdiction includes all areas 100 feet (30 m) inland and parallel to the mean high tide line. BCDC uses the San Francisco Bay Plan and the San Francisco Bay Area Seaport Plan as the long-range planning and implementation documents for the coastal zone management program.

San Francisco Bay Plan

The San Francisco Bay Plan, developed by BCDC in 1969 and revised in 1997, contains policies protecting the Bay's economic and natural resources and designates shoreline regional priority use areas. These policies guide permit decisions by BCDC.

San Francisco Bay Area Seaport Plan

The San Francisco Bay Area Seaport Plan was developed jointly by BCDC and MTC in response to state law requiring a maritime element of MTC's Regional Transportation Plan and BCDC's Bay Plan. The Seaport Plan designates sites for port priority uses, such as marine terminals and water-related industry uses. The port priority use designation is intended to reserve adequate waterfront areas for future port and water-related development and to prevent unnecessary Bay filling when such uses expand. Port priority uses include marine terminals and directly related ancillary activities, such as container freight stations, transit sheds and other temporary storage, ship repairing, and support transportation uses, including trucking and port activity, chandlers, and marine services. Other uses, such as public access and public and commercial recreational development, also are permitted as long as they do not significantly impair the efficient use of the port areas.

BCDC revised and adopted the Seaport Plan in April 1996 and formally incorporated it into the Federally approved coastal management program for San Francisco Bay in August 1996. The Seaport Plan designates 55 acres (22 ha) on the southeast portion of HPS as port priority use (BCDC, 1998). This designation is part of a carefully balanced, long-term plan for port growth in the San Francisco

Bay region, and, pending final agreements between the SLC and the Agency, it is possible that a portion, if not all, of this area would be subject to the Public Trust.

After property disposal, BCDC jurisdiction at HPS would include all areas within 100 feet (30 m) inland of mean high tide, which is 3.34 feet (1.0 m) National Geodetic Vertical Datum (NGVD), as well as all tidal marsh areas up to an elevation of 5 feet (1.5 m) above mean sea level. BCDC's state jurisdiction requires permits for any fill, extraction of materials, or substantial changes in use of any water, land, or structure in the Bay. Permits for priority use areas and areas within the 100-foot (30-m) shoreline band will be granted or denied based on the appropriate Bay Plan policies for ports, water-related industry, water-oriented recreation, airports, and wildlife areas.

City and County of San Francisco General Plan

The General Plan for the City establishes several policies relevant to existing and proposed land uses at HPS. General Plan policies are listed as "elements." The major elements relevant to land use are Community Facilities, Residence, Commerce and Industry, Recreation and Open Space, Urban Design, and Arts. In addition, the South Bayshore Area Plan contains several policies relevant to the future development of HPS and surrounding lands.

The following Community Facilities objectives are applicable to HPS under the City General Plan:

- Distribute, locate, and design police facilities in a manner that will enhance the effective, efficient, and responsive performance of police functions (Objective 1).
- Assure that neighborhood residents have access to needed services and a focus for neighborhood activities (Objective 3).
- Provide neighborhood centers that are responsive to the community served (Objective 4).
- Develop a system of firehouses that will meet the operating requirements of the fire department in providing fire protection services and that will be in harmony with related public service facilities and with all other features and facilities of land development and transportation provided in other sections of the General Plan (Objective 5).
- Assure that institutional uses are located in a manner that will enhance their efficient and effective use (Objective 9).

The following policies are applicable to HPS under the City General Plan's Residence Element:

- Encourage development of housing on surplus, underused, and vacant public lands (Supply of New Housing Policy 1).
- Use the City's financial powers and resources to reduce the cost and increase the supply of low and moderate income housing (Affordability of Housing Policy 1).
- Seek inclusion of low and moderate income units in new housing development (Affordability of Housing Policy 3).
- Assure housing is provided with adequate public improvements, services, and amenities (Neighborhood Environment Policy 1).
- Prevent housing discrimination based on age, race, religion, sex, sexual preference, marital status, ancestry, national origin, color, or disability (Accessibility Policy 1).
- Expand opportunities for home ownership (Accessibility Policy 7).
- Encourage the balancing of regional employment growth with the development and growth of housing in the region (Regional Coordination Policy 1).

The following policies are applicable to HPS under the City General Plan's Commerce and Industry Element:

- Promote the attraction, retention and expansion of commercial and industrial firms that provide employment improvement opportunities for unskilled and semi-skilled workers (General Citywide Policy 1).
- Emphasize job training and retraining programs that will impart skills necessary for participation in the San Francisco labor market (General Citywide Policy 3).
- Avoid public actions that displace existing viable industrial firms (Industry Policy 3).
- Avoid encroachment of incompatible land uses on viable industrial activity (Industry Policy 5).
- Reestablish HPS as a major source of maritime employment and activity (Maritime Policy 9).

The following policies are applicable at HPS under the City General Plan's Recreation and Open Space Element:

- Seek ways to increase public access to HPS without interfering with maritime use. Encourage construction of new housing near the north gate entrance. Shoreline access could be provided along South Basin extending east from Candlestick Point State Recreation Area. A trail connecting India Basin and Candlestick Point could be provided along Earl Street through the HPS site

and link up to the City shoreline trail (Shoreline Policy 5, Eastern Shoreline).

- Develop a City-wide urban trails system that links City parks and public open space, hilltops, the waterfront, and neighborhoods and ties into the regional hiking trail system (Citywide System Policy 8).
- Require private usable outdoor open space in new residential development (Neighborhoods Policy 5).
- Assure adequate public open space to serve new residential development (Neighborhoods Policy 6).

The following policies are applicable to HPS under the City General Plan's Urban Design Element:

- Avoid encroachments on San Francisco Bay that would be inconsistent with the San Francisco Bay Plan (prepared by BCDC) or the needs of the City's residents (Objective 2, Policy 3).
- Preserve notable landmarks and areas of historic, architectural, or aesthetic value and promote the preservation of other buildings and features that provide continuity with past development (Objective 2, Policy 4).
- Relate the height of buildings to important attributes of the City pattern and to the height and character of existing development (Objective 3, Policy 5).

The following policies are applicable to HPS under the City General Plan's Arts Element:

- Ensure the active participation of artists and arts organizations in the planning and use of decommissioned military facilities in San Francisco (Goal VI, Policy 6).
- Encourage the use of available and existing facilities under local government jurisdiction by artists and arts organizations (Goal VI, Policy 7).
- Identify, recognize, and support existing arts clusters and, wherever possible, encourage the development of clusters of arts facilities and arts-related businesses throughout the City (Goal VI, Policy 11).

City of San Francisco Sustainability Plan

The City's *Sustainability Plan* (City and County of San Francisco, Department of the Environment, 1997) was endorsed by the San Francisco Board of Supervisors on July 21, 1997 (Resolution No. 692-97), as a nonbinding guideline for policy and practice in the City and

County. The basic goal of the plan is to enable the City and its people to meet present needs without sacrificing the ability of future generations to meet their needs. The plan contains short-term (five-year) and long-term objectives and specific actions related to various topics, such as air quality, energy, hazardous materials, parks, solid waste, transportation, water and wastewater, economic development, environmental justice, and risk management.

Many of the *Sustainability Plan* objectives do not directly relate to the Proposed Reuse Plan. Others are very specific and cannot be evaluated at this time, because project-specific details of the Proposed Reuse Plan, such as building design and landscaping, have not been formulated. Applicable objectives related to the Proposed Reuse Plan are briefly discussed below.

Transportation objectives of the *Sustainability Plan* focus on reducing vehicle miles and facilitating use of transit, bicycles, and walking. The Proposed Reuse Plan would rely on planned MUNI line extensions and upgrades to allow a high proportion of project trips to occur on public transit.

The *Sustainability Plan* calls for expanding green space and providing recreational facilities. As described in EIS/EIR Chapter 2, the Proposed Reuse Plan includes open space along the southwestern and northeastern shorelines, as well as near proposed residential development, including areas for passive and active recreation, plazas and promenades, and potential wetlands restoration to serve future HPS residents, workers, and visitors.

The *Sustainability Plan* includes strategies for water and wastewater, such as maximizing wastewater reclamation and reuse, conserving potable water, minimizing storm water flows in the City's combined sewer system, reducing system discharges to the Bay, and ensuring that discharges do not impair receiving waters. There are three separate scenarios for managing storm water and wastewater at HPS: upgrade and maintain the Navy's separate sewer and storm water system (Option 1), replace the Navy's system with a new separated system (Option 2), and replace the Navy's system with a combined system where storm water and sewage are transported to the Southeast Water Pollution Control Plant (SEWPCP) for treatment in the same pipes (Option 3). Options 2 and 3 are intended to improve Bay water quality, and Option 2 would also minimize contributions to the City's combined sewer system. The water quantity and water quality effects of these proposed systems are described in Section 4.9, Water Resources.

Goals of the *Sustainability Plan* include making it a priority to minimize hazardous materials use and generation and focus remediation efforts on those issues with the highest risk of danger to human and environmental health. This approach is consistent with the disposal and reuse of HPS.

The Proposed Reuse Plan would create industrial, research and development, mixed-use, cultural and educational, residential, open space, and maritime industrial development, projected to generate up to 6,400 jobs and to contain up to 3,900 residents (in build-out year 2025). This increase in jobs and housing generally reflects the *Sustainability Plan's* assertion that "cleanup and reuse" of contaminated sites will "enable new economic development at the same time that exposure to hazardous materials from these sites is eliminated." Furthermore, the high density residential and commercial development planned under the Proposed Reuse Plan is generally more efficient compared with lower density development, resulting in lower consumption of resources, such as energy resources.

Zoning

The South Bayshore planning area contains zoning for residential, commercial, industrial, and public uses (Figure 3.4-5). HPS is currently zoned for public (P) and industrial (M-1 and M-2) uses. Table 3.4-1 summarizes general characteristics of the existing zoning districts illustrated on Figure 3.4-5.

The Bayview-Hunters Point Project Area Committee (PAC) and the Agency are working together to develop a Revitalization Concept Plan for Bayview-Hunters Point. The plan will provide a vision for the area's future and will serve as the basis for creating a redevelopment plan. The Concept Plan is projected to be completed in the fall of 1998, with adoption in the summer of 1999.

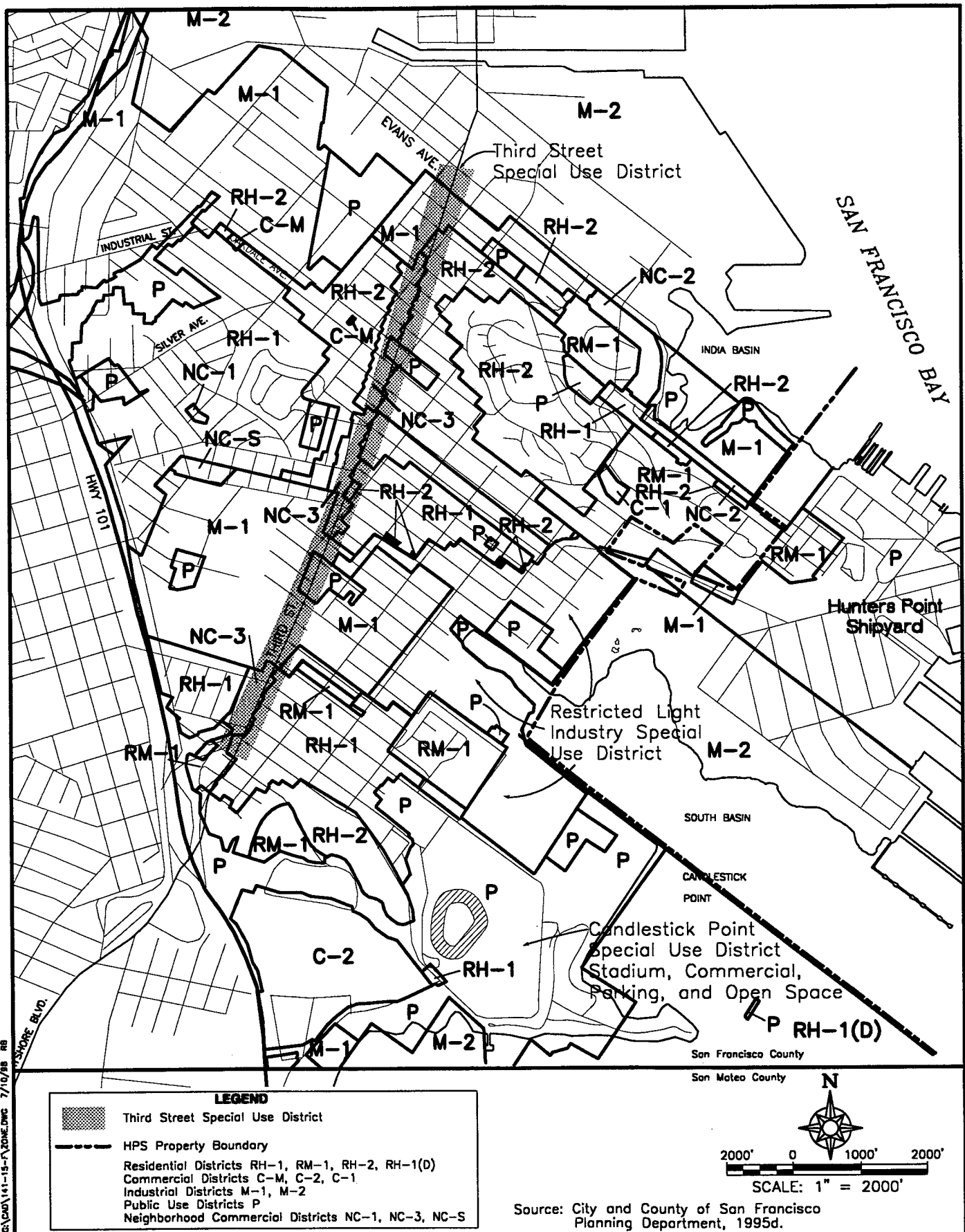


Figure 3.4-5: Zoning for South Bayshore Planning Area

TABLE 3.4-1: ZONING DISTRICTS IN THE SOUTH BAYSHORE PLANNING AREA

ZONING DISTRICT	PERMITTED USES
RESIDENTIAL DISTRICTS	
RH-1, RH-1(S), RH-1(D), RH-2	<p>RH-1(D): One dwelling unit per lot.</p> <p>RH-1: One dwelling unit per 3,000 square feet (279 square m) of lot area, maximum of 3 units.</p> <p>RH-1(S): Same as RH-1, or, 2 units per lot with second unit maximum of 600 square feet (56 square m).</p> <p>RH-2: Two residential units per lot.</p> <p>Other permitted uses: residential care facility for six or fewer; open space for horticulture or passive recreation; public structure or use of a nonindustrial character.</p> <p>Additional residential units based on lot size are available with a conditional use permit authorized by the Planning Commission.</p>
RM-1	<p>One dwelling unit per 800 square feet (74 square m) of lot area.</p> <p>Other permitted uses: same as RH districts, plus group housing, boarding, religious orders.</p> <p>Additional residential units based on lot size are available with a conditional use permit authorized by the Planning Commission.</p>
COMMERCIAL DISTRICTS	
C-1 Neighborhood Shopping	Retail goods and personal services at convenient locations to meet the needs of nearby residents, usually surrounded by residential areas of relatively low density.
C-2 Community Business	Larger scale than C-1 districts, provides convenience goods and services to more densely built residential areas of the City, with city-wide or regional market including wider variety of goods and services.
C-M Heavy Commercial	Heavy commercial uses not permitted in other commercial districts, including wholesaling and business services, some light manufacturing and processing also permitted along with retail, office, and service uses.
INDUSTRIAL DISTRICTS	
M-1 Light Industrial	Smaller industries dependent on truck transportation.
M-2 Heavy Industrial	Larger industries served by rail and water transportation and by large utility lines.
PUBLIC USE DISTRICT	
P	<p>Land owned by a government agency in some form of public use, including open space; public structures and use of government agencies, including accessory nonpublic uses in conformity with the General Plan and other applicable codes.</p> <p>Accessory nonpublic use within 1/4 mile (396 m) of NC-1 or Restricted Use Subdistrict requires conditional use permit.</p>
NEIGHBORHOOD COMMERCIAL DISTRICTS	
NC-1	Local neighborhood shopping (corner stores), retail sales and services (ground floor only), residential with 1 unit per 800 square feet (74 square m) of lot area.
NC-2	Small-scale shopping at street level but with increased building size and some retail allowed on second floor
NC-3	Moderate-scale linear shopping but with increased building size and most retail allowed on second floor.
NC-S	Small shopping centers with low-scale buildings and parking lots; residential with up to 1 unit per 800 square feet (74 square m) of lot area.

Source: City and County of San Francisco, Planning Department, 1995d.

3.5 VISUAL RESOURCES AND AESTHETICS

This section describes the features that make up the visual environment at HPS. The ROI for visual resources and aesthetics includes HPS, surrounding residential and industrial areas, and San Francisco Bay, as well as more distant hillsides, waterfront areas, and areas with prominent views of the site.

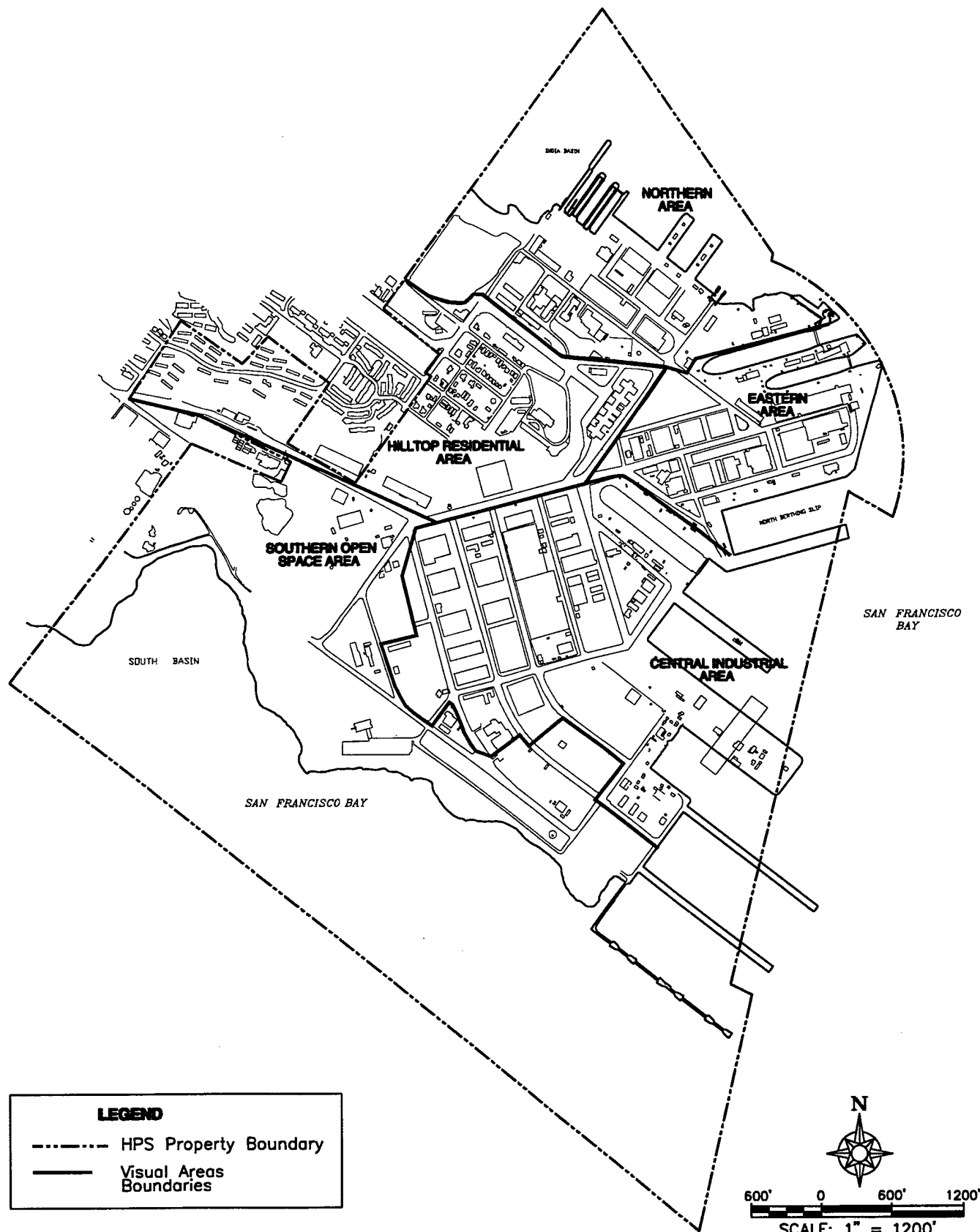
3.5.1 Visual Features at HPS

Prominent visual features, sensitive viewpoints, and views from HPS and of HPS are described below. Figure 3.5-1 identifies prominent visual features and views on HPS. Figure 3.5-2 defines distinct visual areas at HPS, where photographs illustrating prominent visual features for each area were taken. Figure 3.5-3 provides the reference locations of the photographs.

The overall character of HPS is defined by industrial structures, paved areas, open spaces, and residential areas with landscaped vegetation and by the proximity of portions of the site to San Francisco Bay. Most of the site is flat. A ridge (Hunters Point Hill) extends onto the site from the northwest and forms a sharp visual contrast to the flat portion of HPS to the east. The ridge divides the site, creating visually isolated parcels to the north and south. The ridge is visible from more distant locations on San Francisco Bay, Candlestick Point, and Bayview Hill. The eastern portion of HPS overlooks San Francisco Bay and associated maritime activity. The entire site is not visible from any one ground-level location.

HPS contains a number of visual focal points: the large crane structure on the waterfront, the 6-story green glass Building 253, Building 815 (the UCSF animal care facility) at the southern base of the ridge adjacent to the site, the 10-story Building 600 on the southern shoreline, and the 5-story Building 921 (former bachelor officer's quarters) on Hunters Point Hill. In addition to these individual focal points, the central portion of HPS is an industrial facility characterized by large buildings and parking/storage yards, with increased open space and decreased development intensity to both the north and south.

Large areas in the northern and southern parts of HPS are characterized by undeveloped open fields and shorelines that are visually similar to off-site open space and shoreline areas. To the east, HPS is characterized by maritime development dominated by piers, ships, cranes, and drydocks. Hunters Point Hill and associated residential development characterize the western edge of HPS.



Source: City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1994a.

Figure 3.5-2: Visual Areas, Hunters Point Shipyard

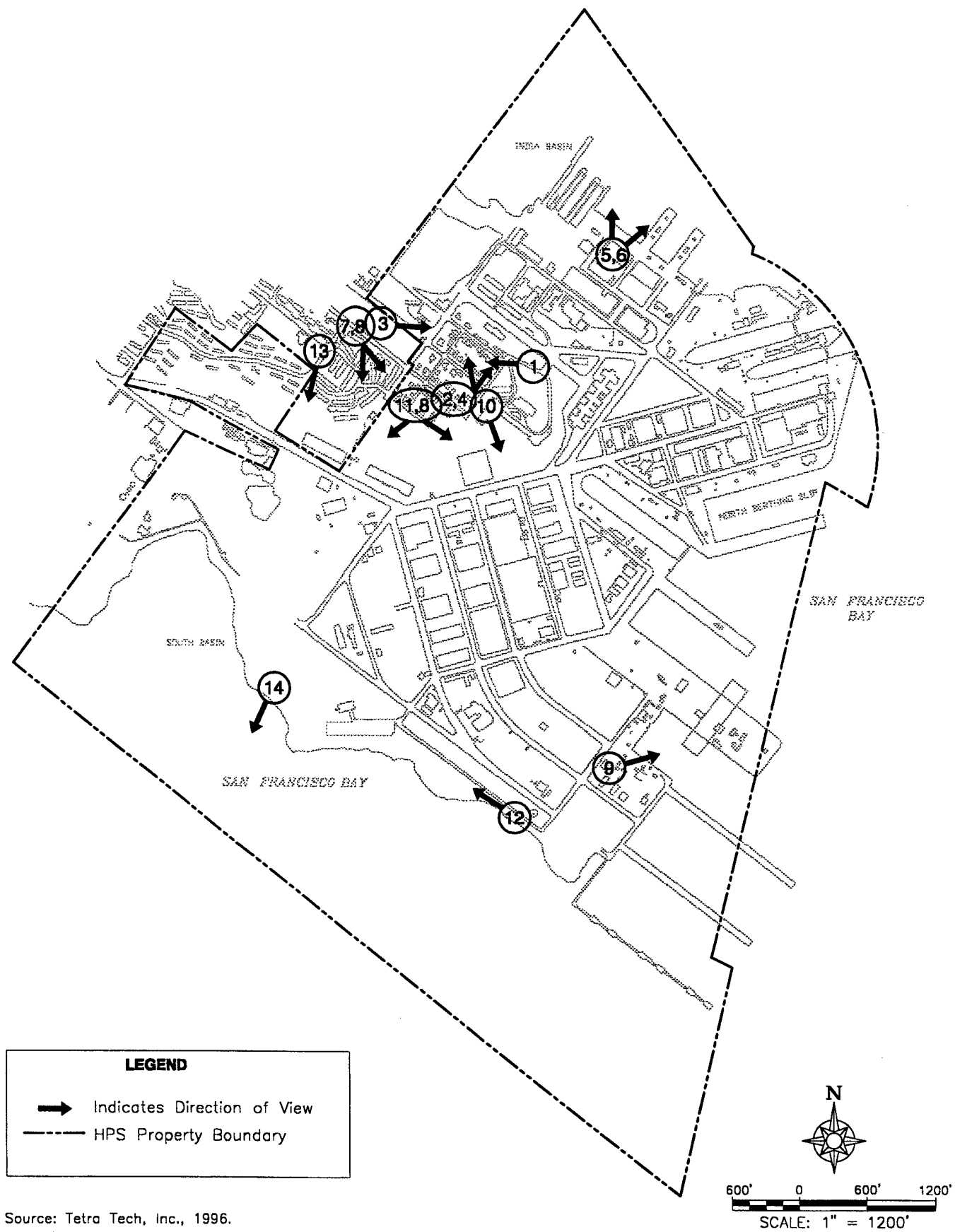


Figure 3.5-3: Photograph Locations, Hunters Point Shipyard

Hilltop Former Residential Area

This area is separated from the rest of HPS by a prominent ridge (Hunters Point Hill) that divides the western part of HPS. The residential units in this area are uninhabitable (Figure 3.5-4, Photograph 1). The ridge, composed of grassy slopes with the former residential area at its crest, affords prominent views of HPS (Figure 3.5-4, Photograph 2). The south side of the ridge is adjacent to a residential area of the Bayview Hunters Point neighborhood. The industrial portion of HPS, including buildings in the central industrial area, as well as the large crane and ships berthed along the HPS waterfront, are visible from this location. However, publicly accessible views of the central and eastern areas of HPS from the ridge are limited by fencing around the former residential area.

Northern Area

This area is characterized by open space and industrial development (see Figure 3.5-5, Photographs 3 and 4). The western portion of this area is an open field abutting an open area adjacent to HPS, which extends east and south from India Basin. The eastern portion of the Northern Area is characterized by large and small warehouses, other industrial structures, large parking areas, and open industrial/maritime back-lot areas. This area also includes finger piers and larger docks extending into the Bay. Large ships docked at the piers are often visible.

The entrance to HPS and buildings and vegetation along Innes Avenue are visible from the west and north/northwest (Figure 3.5-5, Photograph 3). There are limited views of this area from the north-facing slope of Hunters Point Hill (Figure 3.5-5, Photograph 4). The eastern portions of this area also can be seen from San Francisco Bay. Visual features in this area include ships and the waterfront, as well as excellent, unobstructed medium- and long-range views of San Francisco Bay, the East Bay (Figure 3.5-6, Photograph 5), Yerba Buena Island, and downtown San Francisco (Figure 3.5-6, Photograph 6).

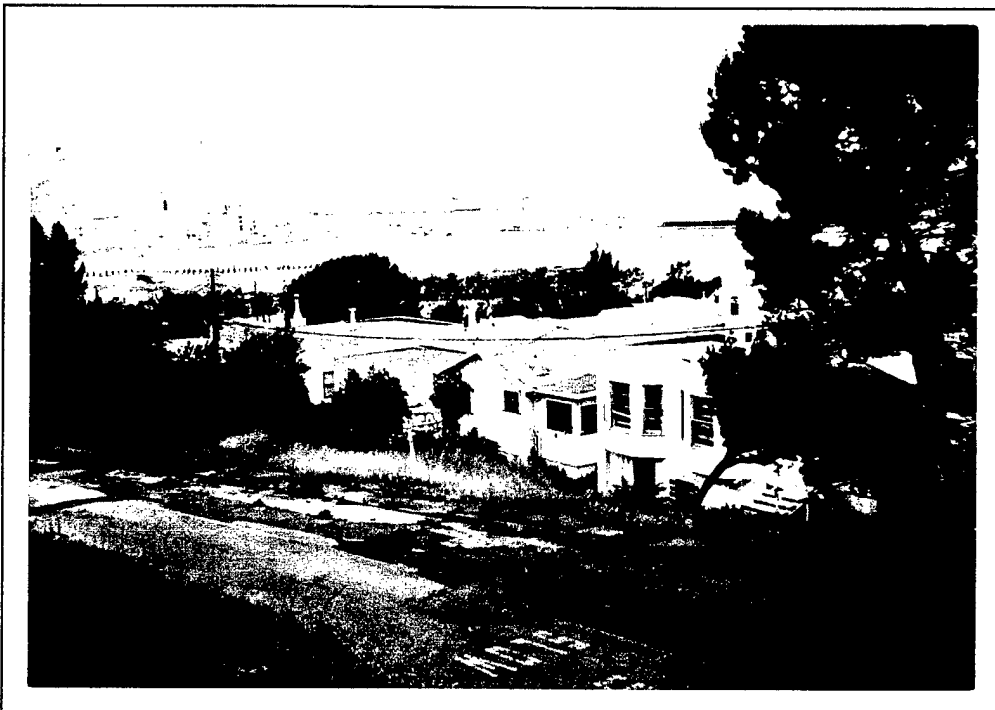
Eastern Area

This area provides views east of the eastern tip of the ridge that are characterized by large industrial and warehouse-type development. The visually prominent Building 253 can be seen in views from the northwest and from the Bay. Large ships, which occasionally berth at piers in this area, are also visible.

Similar to the Northern Area, the Eastern Area provides unobstructed distant views of the East Bay (see Figure 3.5-6, Photograph 5) and of downtown San Francisco (see Figure 3.5-6, Photograph 6). Views of this area from the ridge are blocked by fencing around the former residential area.



Photograph 1



Photograph 2

Figure 3.5-4: Views of Hunters Point Hilltop Residential Area

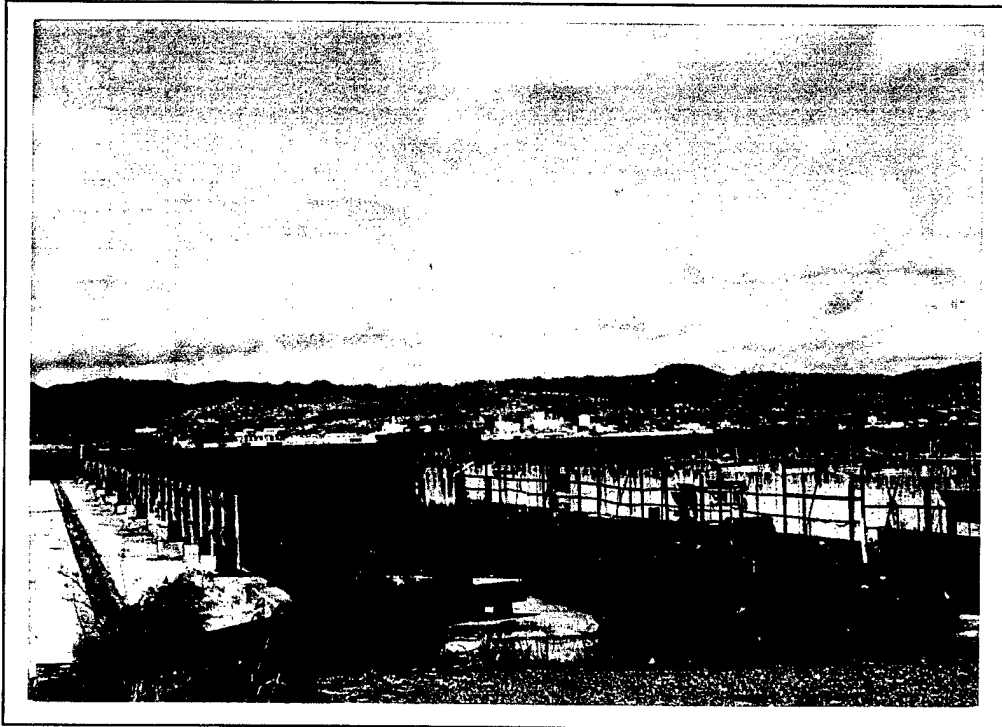


Photograph 3

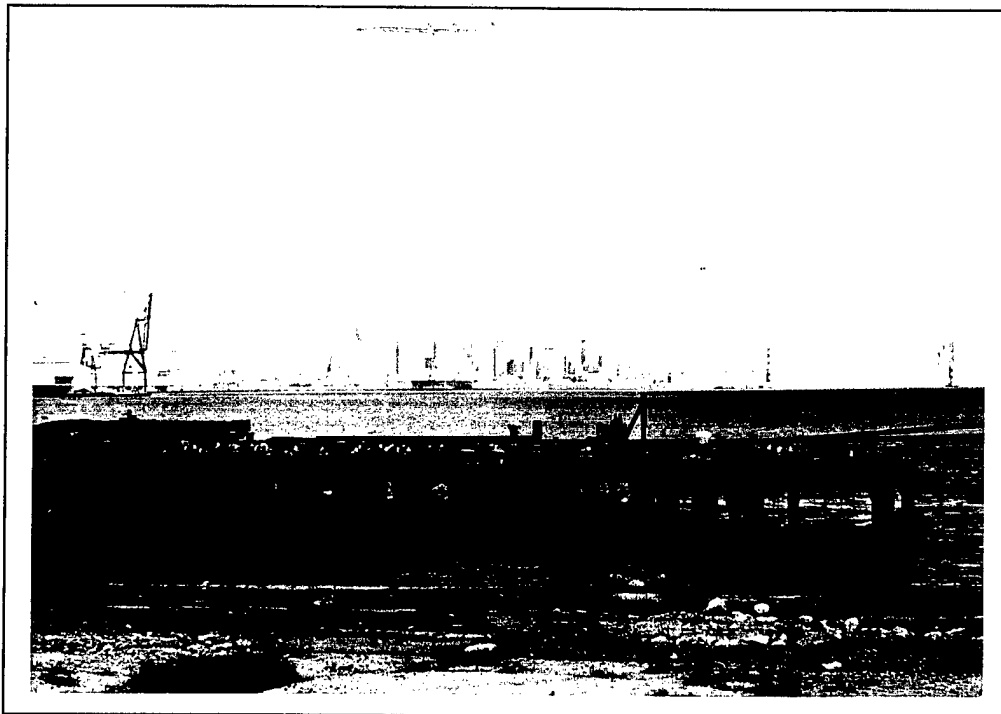


Photograph 4

Figure 3.5-5: View of Main Gate from the North and View of Northern Area from the South



Photograph 5



Photograph 6

Figure 3.5-6: Views of East Bay and San Francisco from Northern Area

Central Industrial Area

The Central Industrial Area is a level area characterized by large warehouse-type structures to the north and open space and maritime uses to the south and east (Figure 3.5-7, Photograph 7). In addition, several large industrial/warehouse-style buildings are prominent at the base of the ridge, providing a visual connection to the adjacent off-site industrial area to the south. The easternmost portion of this area contains docks and berthing ships (Figure 3.5-7, Photograph 8). The most prominent visual feature of HPS is the large waterfront crane structure, which is visible from all directions (Figure 3.5-8, Photographs 9 and 10).

Close-up views from this area include large structures and ships in the eastern half, the crane, and the ridge behind this area. Middle- and long-distance views include the East Bay, Candlestick Point, Bayview Hill, and San Bruno Mountain. Most of this area is visible from residential areas on the south-facing slope of the adjacent ridge, as well as from more distant viewpoints on Bayview Hill just west of Candlestick Park and from the shoreline park areas of Candlestick Point State Recreation Area.

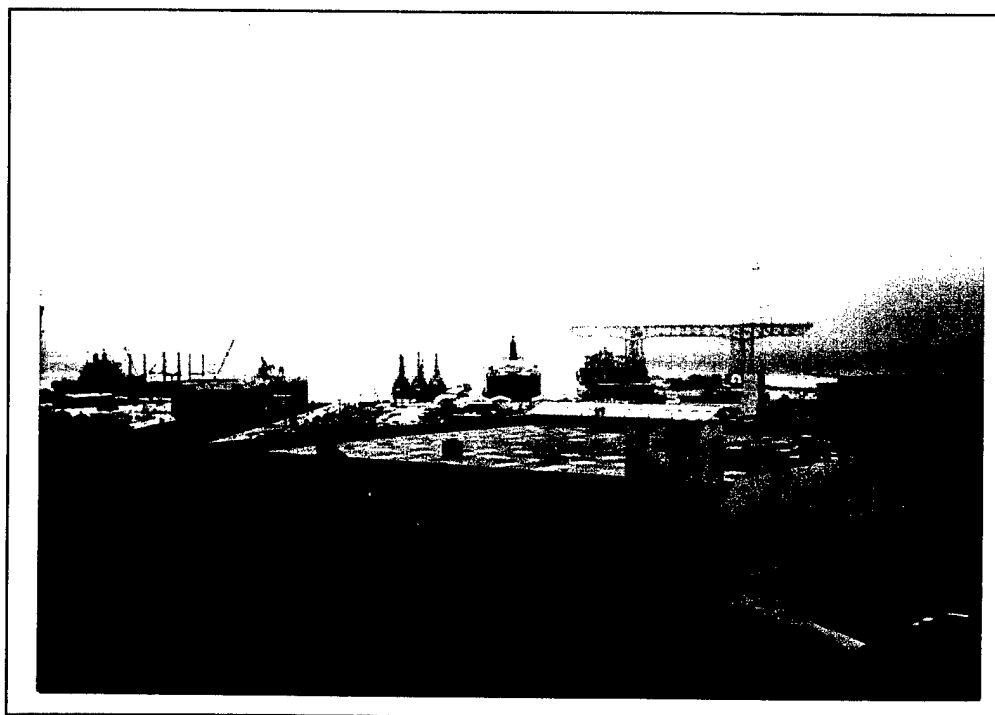
Southern Open Space Area

The Southern Open Space Area, located immediately west of the Central Industrial Area (Figure 3.5-2), is characterized by undeveloped, vegetated open space with a few small buildings and the visually prominent 10-story Building 600, the former bachelor enlisted quarters.

Viewed from the south, this area is low-lying and undeveloped, and its shoreline area appears as a natural extension of the undeveloped Candlestick Point State Recreation Area south of HPS. Building 600 is prominent in views from the Hilltop Residential Area, public viewpoints on the ridge, and from the Candlestick Point and Bayview Hills areas (Figure 3.5-9, Photographs 11 and 12). The Southern Open Space Area affords views to the south, including views of the South Basin, Candlestick Point, 3Com Park, Bayview Hill, and San Bruno Mountain (Figure 3.5-10, Photographs 13 and 14). The eastern tip of this area also has views across the Bay to the east.

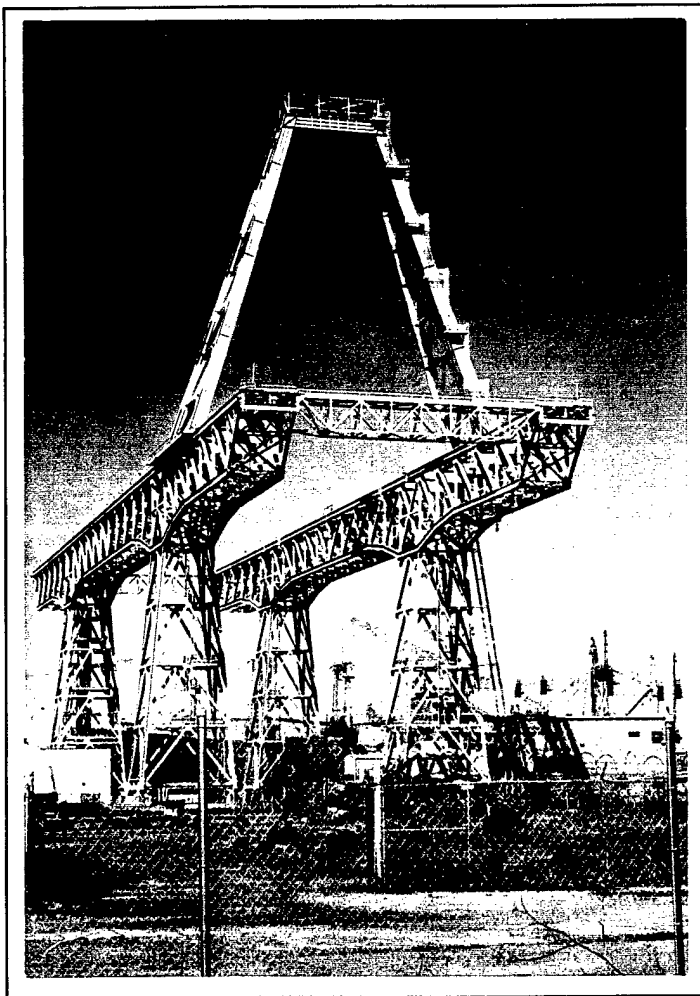


Photograph 7

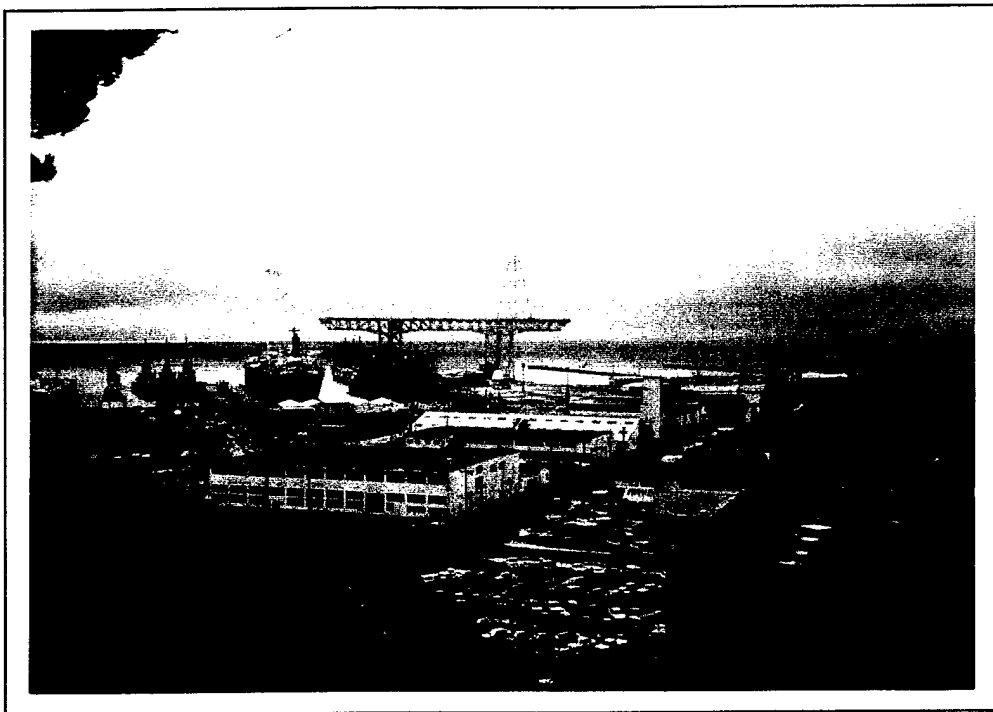


Photograph 8

Figure 3.5-7: Views of Central Area from Ridge

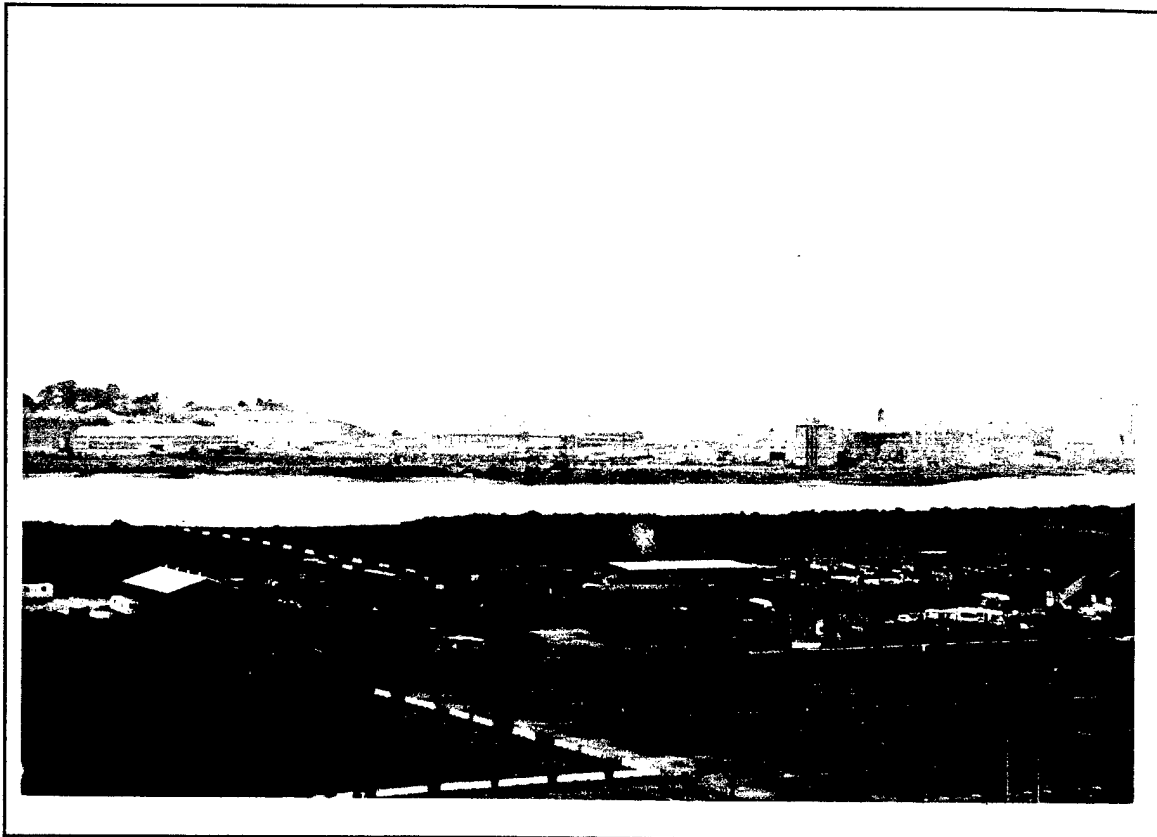


Photograph 9

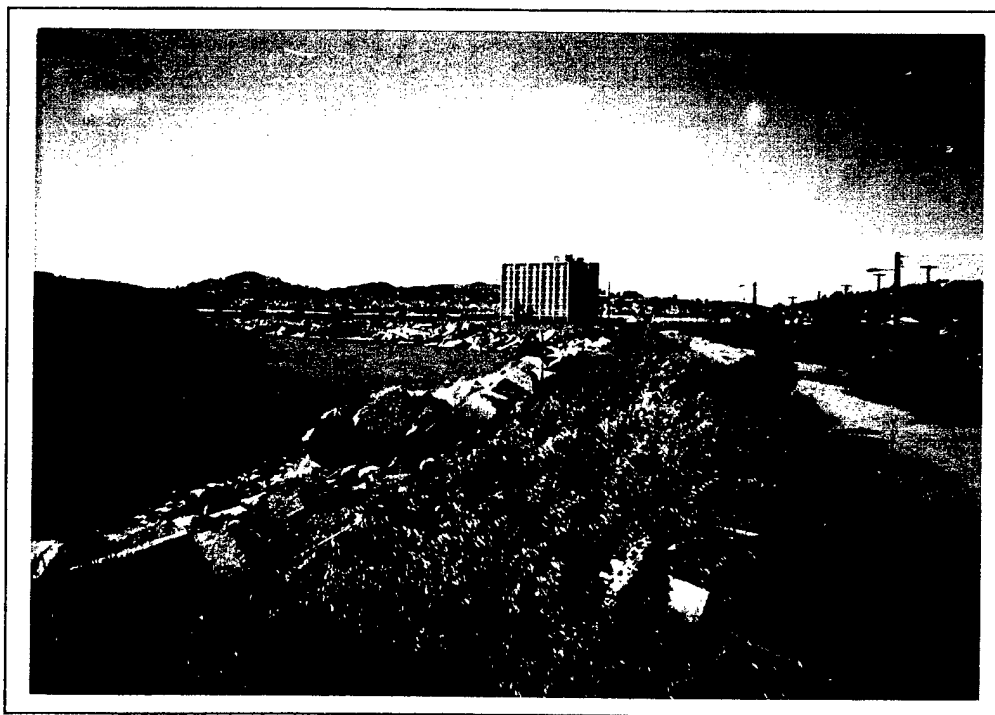


Photograph 10

Figure 3.5-8: Views of Central Area Including Large Crane Structure

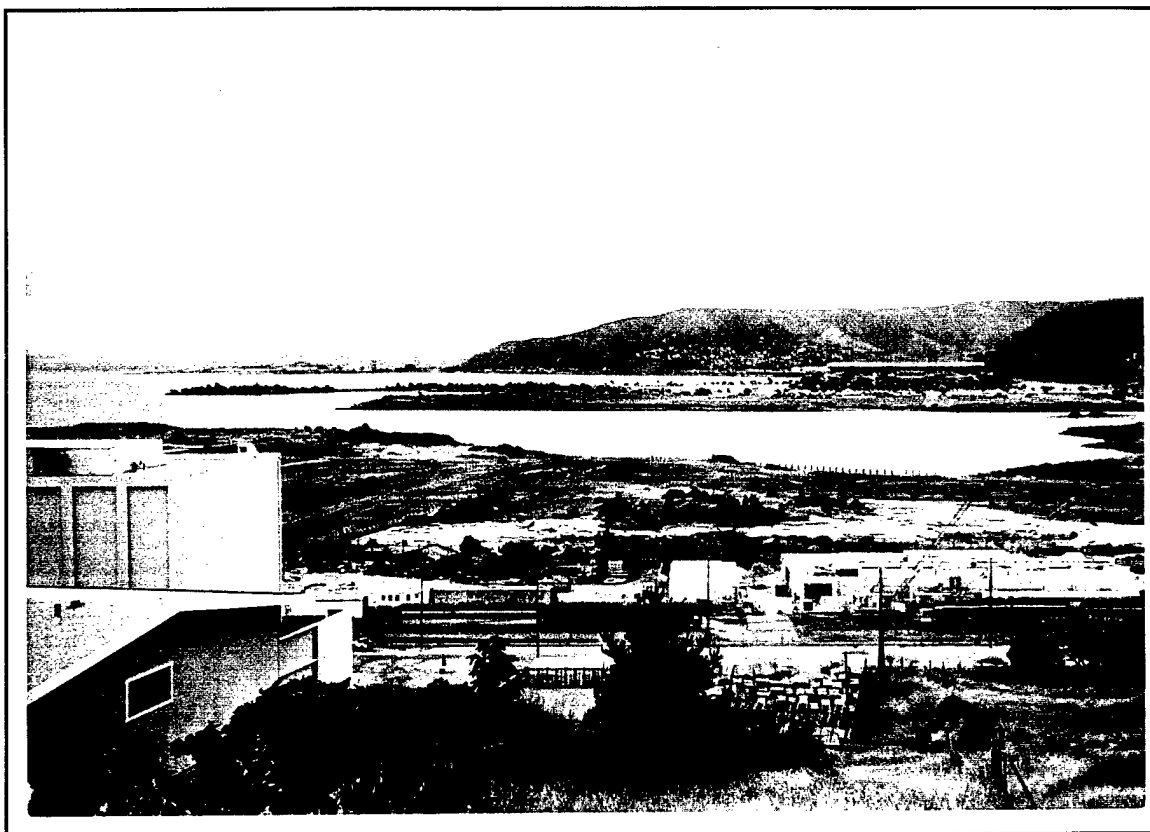


Photograph 11



Photograph 12

Figure 3.5-9: View of Southern Open Space Area from On- and Off-Site



Photograph 13



Photograph 14

Figure 3.5-10: Views Looking South Across Southern Open Space Area

3.5.2 Distant Views of HPS

Because of the generally flat topography and its location on a peninsula extending out into the Bay, HPS is visible from several distant off-site locations. The large crane, ridge, and any berthed ships are visible from the San Francisco-Oakland Bay Bridge, downtown San Francisco high-rises, and East Bay vantage points. This site also can be seen from the Sierra Point area and as a backdrop to 3Com Park approaching San Francisco from northbound U.S. 101. The large crane and Building 815 at the base of the hill, just off-site, are clearly distinguishable from this viewpoint. The only widely available mid-range view of the site is from Bayview Hill, south of HPS.

3.5.3 Plans and Policies

The following Urban Design Element policies are applicable to HPS under the City General Plan (City and County of San Francisco, Planning Department, 1995a):

- Recognize and protect major views in the City, with particular attention to those of open space and water (City Pattern Policy 1).
- Recognize, protect, and reinforce the existing street pattern, especially as it is related to topography (City Pattern Policy 2).
- Protect and promote large-scale landscaping and open space that define districts and topography (City Pattern Policy 4).
- Recognize the natural boundaries of districts, and promote connections between districts (City Pattern Policy 7).
- Preserve in their natural state the few remaining areas that have not been developed by man (Conservation Policy 1).
- Limit improvements in other open spaces having an established sense of nature to those that are necessary and unlikely to detract from the primary values of the open space (Conservation Policy 2).
- Avoid encroachments on San Francisco Bay that would be inconsistent with the Bay Plan or the needs of the City's residents (Conservation Policy 3).
- Preserve notable landmarks and areas of historic, architectural, or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development (Conservation Policy 4).
- Avoid extreme contrasts in color, shape and other characteristics that would cause new buildings to stand out in excess of their public importance (Major New Development Policy 2).

- Recognize the special urban design problems posed by the development of large-scale properties (Major New Development Policy 7).

3.6 SOCIOECONOMICS

This section describes the South Bayshore area's socioeconomic setting and its contribution to the local economy. This description includes population, housing (including household characteristics), employment, and schools. Each of these elements is presented with information on the ROI and the City as a whole for comparison purposes. The ROI for socioeconomics is the South Bayshore planning area, also referred to as the Bayview-Hunters Point neighborhood of San Francisco.

The description of socioeconomic conditions is based on a variety of sources, including the 1990 U.S. census (U.S. Department of Commerce, Bureau of the Census, 1993), *San Francisco Neighborhood Profiles 1997* (City and County of San Francisco, Planning Department, 1997d), population and employment projections prepared by the Association of Bay Area Governments (ABAG, 1995 and 1997), and the projections of City-wide cumulative growth recently prepared by the Agency in cooperation with the Planning Department (Keyser Marston Associates, Inc., 1998). Trends since 1990 and projections to 2020 are described below.

3.6.1 Background

The South Bayshore planning area is a predominantly industrial and residential district of San Francisco. Historically, it was the location of much of the City's heavy industry and was an active center for World War II shipbuilding activity. After the war, much of the military housing on Hunters Point Hill was demolished and later replaced with subsidized housing complexes. Appendix E describes the area's community history.

The South Bayshore planning area is at a critical junction. Many major development projects are planned for San Francisco in the next decade. Many of these planned projects—such as Mission Bay and the new UCSF campus, the Third Street LRT extension, and the Candlestick Point Retail/Entertainment Center—are located in the southeastern quadrant of the City and have the potential to stimulate needed economic development, population growth, and employment opportunities in the Bayview-Hunters Point neighborhood.

The Agency is currently conducting studies on several segments of a proposed redevelopment plan area in the project vicinity. In addition to the HPS reuse planning process, the City is currently preparing a redevelopment plan for an area that encompasses almost the entire South Bayshore planning area except for three pre-existing redevelopment plan areas: HPS, the Bayview Industrial Triangle, and the India Basin Industrial Park. This area, known as the Bayview-Hunters Point survey area, extends from Cesar Chavez Street on the

north to the City/County line on the south and from U.S. 101 on the west to the Bay on the east. The Bayview-Hunters Point Survey Area Concept Plan will focus primarily on revitalizing the Third Street Corridor, as well as the industrial areas to the north and south of Bayview-Hunters Point.

The Agency recently completed an analysis of the cumulative growth implications of the major development and redevelopment projects currently in the planning stages in San Francisco (Keyser Marston, 1997). As a result of this study, ABAG's *Projections 96* (ABAG, 1995) population and employment estimates for San Francisco were adjusted upward to reflect the new planned growth. ABAG had projected virtually no population growth, but a 19 percent employment growth rate, for San Francisco between 1995 and 2015. The revised estimates indicate an expected population growth rate of 8 percent and an employment growth rate of 24 percent in San Francisco over this 20-year period. Similarly, ABAG's estimates of a 26 percent population growth rate and a 39 percent employment growth rate in Bayview-Hunters Point between 1995 and 2015 were revised upward, to 34 percent and 54 percent, respectively.

Table 3.6-1 presents an overview of 1990 socioeconomic characteristics for the South Bayshore planning area and San Francisco. This information is discussed where appropriate in the sections that follow. Figure 3.6-1 shows the location of the eight census tracts that comprise the South Bayshore planning area.

3.6.2 Population

Table 3.6-2 shows the projected population growth in the South Bayshore planning area from 1990 to 2020. About four percent of San Francisco's population now lives in the Bayview-Hunters Point neighborhood. The Bayview-Hunters Point population is expected to increase steadily over this period, with the largest percentage increase (approximately 23 percent) to occur between 2000 and 2010. City-wide, the population is expected to increase through 2010, then to stabilize and even decrease slightly between 2010 and 2020.

As shown in Table 3.6-1, the ethnic composition of the Bayview-Hunters Point neighborhood is quite different from that of San Francisco as a whole. In 1990, 47 percent of San Francisco's population was White, compared with only nine percent of the Bayview-Hunters Point population. In addition, while African-Americans comprised 11 percent of the population City-wide, they represented a majority (61 percent) of the Bayview-Hunters Point population. The percentages of Asian-Americans and Hispanic-Americans in San Francisco and in Bayview-Hunters Point were not so disparate, but in both cases the percentage of these groups was lower in Bayview-Hunters Point than in the City as a whole.

TABLE 3.6-1: COMPARISON OF SOCIOECONOMIC CHARACTERISTICS, SOUTH BAYSHORE PLANNING AREA AND SAN FRANCISCO, 1990

DESCRIPTION	SOUTH BAYSHORE PLANNING AREA	SAN FRANCISCO
Population	28,255	723,959
Racial Diversity		
White	2,559 (9%)	338,917 (47%)
African American	17,239 (61%)	76,944 (11%)
Asian/Pacific Islander	6,123 (22%)	207,457 (29%)
Hispanic	2,258 (8%)	96,640 (13%)
Other	76 (<1 %)	4,001 (<1%)
Median Household Income	\$25,485	\$33,413
Median Age	30.8	35.7
Housing Vacancy Rate	6.55%	6.97%
Owner Occupancy Rate	53.1%	34.5%
Housing Units per Acre	2.9	11.0
Unemployment		
Overall Rate	13.3%	6.3%
White	3.3%	4.9%
African American	17.8%	13.5%
Asian/Pacific Islander	8.7%	6.1%
Hispanic Origin	8.1%	8.9%

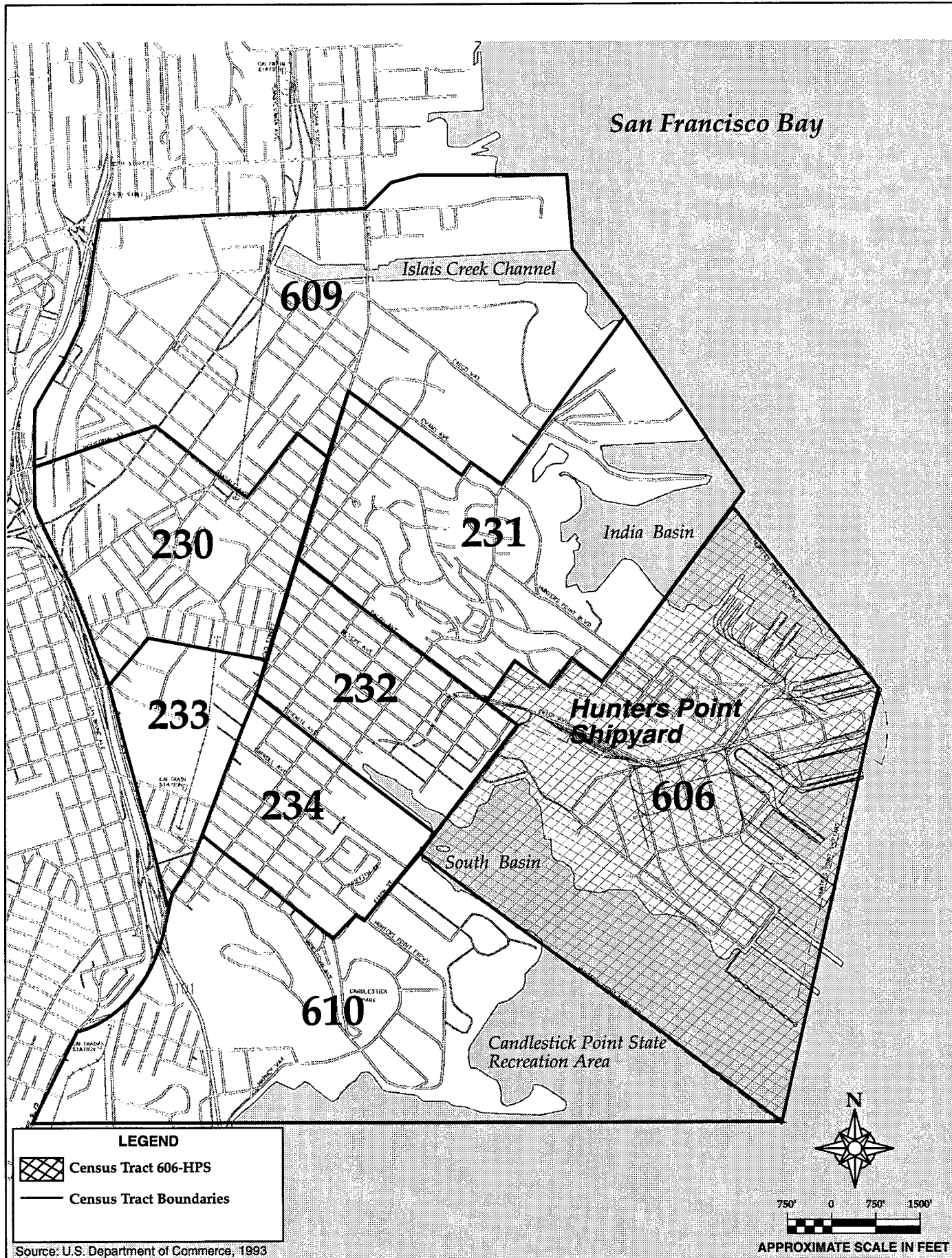
Source: City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1997d.

Note: Detailed demographic information is available from the decennial census for both San Francisco and the Bayview-Hunters Point neighborhood, but not from more current sources. Since 1990, while total population has grown, it is assumed that characteristics such as race and age have not changed substantially.

TABLE 3.6-2: PROJECTED POPULATION GROWTH, SOUTH BAYSHORE PLANNING AREA AND SAN FRANCISCO, 1990-2020

	1990	2000	% Change 1990-2000	2010	% Change 2000-2010	2020	% Change 2010-2020
South Bayshore Planning Area	28,255	32,267	14%	39,586	23%	42,246	7%
San Francisco	723,959	785,885	9%	806,200	3%	793,394	-2%

Source: ABAG, 1997 and City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1997d.



The median age for South Bayshore planning area residents was 30.8 years in 1990—lower than the City-wide median of 35.7 years. The percentage of senior citizens in the South Bayshore planning area population, 12.6 percent, was similar to the City-wide percentage of 14.6. The percentage of persons 18 years of age or under (29 percent), however, was almost double the City-wide percentage of 16.1 percent (U.S. Department of Commerce, Bureau of the Census, 1993).

3.6.3 Housing

The South Bayshore planning area's housing stock consists primarily of single-family units and subsidized rental units for low- and moderate-income families, although the trend in new construction is toward more multi-family units. In spite of this construction trend, the growth rate of single-family units in the South Bayshore planning area remains more than twice the growth rate for single-family units City-wide. The reason for this is that, while many areas of the City are built out, there still remains a substantial number of vacant infill single-family lots in the Bayview-Hunters Point neighborhood. In 1990, the average number of units per acre (0.4 hectares [ha]) in the Bayview-Hunters Point neighborhood was 2.9, compared with 11.0 units per acre (0.4 ha) City-wide. This explains why Bayview-Hunters Point, which encompasses approximately 11 percent of San Francisco's land base, contains only 4 percent of the City's population.

The housing vacancy rate in the South Bayshore planning area in 1990 (6.55 percent) was comparable to the rate for the entire City (6.97 percent). The homeownership rate in the Bayview-Hunters Point neighborhood is relatively high, as evidenced by the owner occupancy rate of 53.1 percent in 1990, compared with only 34.5 percent City-wide.

Table 3.6-3 shows the anticipated growth in households in the study area from 1990 to 2020. Households in both the Bayview-Hunters Point neighborhood and the City are expected to increase steadily throughout this period. An estimated 4,000 new housing units will be needed to accommodate the projected growth in households between 1990 and 2020. Household size in the Bayview-Hunters Point neighborhood is expected to remain higher than the average household size in the City.

TABLE 3.6-3: PROJECTED NUMBER OF HOUSEHOLDS (AND AVERAGE HOUSEHOLD SIZE), SOUTH BAYSHORE PLANNING AREA AND SAN FRANCISCO, 1990-2020

	1990	2000	2010	2020
South Bayshore Planning Area				
Projected # of Households	8,646	9,456	11,813	13,037
Average Household Size	3.20	3.39	3.33	3.23
San Francisco				
Projected # of Households	305,584	317,970	331,290	337,340
Average Household Size	2.29	2.40	2.36	2.28

Data Source: ABAG, 1997.

Housing affordability is an important concern, both in the South Bayshore planning area and in San Francisco. Housing prices in the South Bayshore planning area almost tripled between 1980 and 1990, increasing by 190.3 percent—similar to the 187.7 percent increase in housing prices City-wide. In 1990, the median value of an owner-occupied dwelling in the South Bayshore planning area was \$201,600—lower than the City-wide median of \$298,900. Studies indicate that the price gap between homes in Bayview-Hunters Point and other parts of San Francisco is narrowing (Sedway & Associates, 1991).

In 1990, almost a fourth (24.3 percent) of all families in the South Bayshore planning area were living below the poverty level, compared with only 9.7 percent of households City-wide. The median household income in Bayview-Hunters Point was \$25,485, below the City-wide median household income of \$33,413. The median household income in each of the eight South Bayshore planning area census tracts ranged from \$15,089 to \$70,543 in 1990 (U.S. Department of Commerce, Bureau of Census, 1993).

3.6.4 Employment

The San Francisco Bay Area region experienced a relatively severe economic recession and some job loss during the early 1990s; however, regional economic recovery is well underway. In 1995, there were over three million jobs in the region. ABAG projects that regional employment will approach four million by 2010. The trend of decentralization of jobs away from urban areas to suburban areas is also expected to continue over the next several decades. The East Bay and North Bay counties will continue to capture an increasing share of total jobs in the region (ABAG, 1997; City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1998).

San Francisco

San Francisco plays an important role as a job center, with diverse linkages to the regional economy (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1997d). San Francisco has recovered from the job losses experienced during the early 1990s and has returned to a period of economic expansion. As Table 3.6-4 shows, total employment in San Francisco is expected to increase by about 19 percent from 1990 to 2020. Most of this growth will occur in services, with some growth also expected in the manufacturing (including high technology) and retail trade sectors (ABAG, 1997).

**TABLE 3.6-4: PROJECTED EMPLOYMENT BY SECTOR,
SAN FRANCISCO, 1990-2020**

	1990	2000	2010	2020	% Change 1990 to 2020
Agriculture, Forestry, Mining	2,247	2,421	2,278	2,259	1%
Manufacturing	38,926	39,941	42,797	45,459	17%
Wholesale Trade	29,904	23,916	23,626	22,730	-24%
Retail Trade	78,384	78,046	82,799	86,441	10%
Services	224,504	260,231	294,531	330,427	47%
Other	192,683	182,373	192,457	192,329	0%
Total	566,648	586,928	638,488	679,654	20%

Data Source: ABAG, 1997.

Although not anticipated to be the source of substantial employment growth, corporate headquarters and Federal and state government offices will maintain a presence in San Francisco. The City will continue to be a regional and national center for the finance sector, printing and publishing, advertising, design, and other business and professional services, as well as the multimedia sector. Other sources of economic expansion and job growth include the health care industry, educational services, and tourism and convention activity that supports retail, restaurant, entertainment, and other service sectors (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1998).

South Bayshore Planning Area

HPS was the major South Bayshore planning area employer from World War II until the base's closure in 1974. During its three decades of operation, HPS provided a steady source of employment for the nearby labor force and secured the economic vitality of the surrounding area. The loss of jobs and income associated with the

base closure and the dramatic population loss resulting from clearing World War II housing on Hunters Point Hill led to an economic decline in the neighborhood.

Among the 15 established planning districts in San Francisco, the South Bayshore planning area (the Bayview-Hunters Point neighborhood) has the fewest businesses (Williams-Kuebelbeck & Associates, 1994). Census data indicate that there were 1,129 businesses in the South Bayshore planning area in 1990, with the greatest concentrations of these located along Bayshore Boulevard and Third Street. These businesses consisted primarily of heavy commercial outlets, such as large lumber yards and hardware stores. Located on the periphery of the South Bayshore planning area, with direct access to U.S. 101, the Bayshore Boulevard commercial area serves as a regional market. Third Street, running through the middle of the South Bayshore planning area, is also a major thoroughfare, but with a greater number of neighborhood businesses. While immediately accessible to the surrounding Bayview-Hunters Point residential community, Third Street is relatively isolated from other parts of the City and region (City and County of San Francisco, Planning Department, 1995d).

Third Street, which is the neighborhood's main commercial area, has many empty storefronts and an overconcentration of liquor stores. Stimulating the development of new households and job opportunities is vital to increasing demand for retail services along Third Street. The proposed Third Street LRT project is planned not only to improve transit access to and from Bayview-Hunters Point but also to stimulate economic revitalization along the Third Street corridor (U.S. Department of Transportation, Federal Transit Administration and City and County of San Francisco, Planning Department, 1998).

Table 3.6-5 shows employment projections for Bayview-Hunters Point from 1990 to 2020. The total number of jobs in the Bayview-Hunters Point neighborhood is expected to increase about 30 percent over this period, compared with 20 percent employment growth for San Francisco during the same period (Table 3.6-4). As in San Francisco as a whole, the greatest increase is expected to be in service sector jobs, with smaller percentage gains in manufacturing and retail jobs.

**TABLE 3.6-5: PROJECTED EMPLOYMENT BY SECTOR,
BAYVIEW-HUNTERS POINT, 1990-2020**

	1990	2000	2010	2020	% Change 1990 to 2020
Agriculture, Forestry, Mining	60	42	40	40	-33%
Manufacturing	3,981	5,283	5,553	5,814	46%
Wholesale Trade	4,070	3,252	3,152	2,890	-29%
Retail Trade	3,134	3,291	3,633	3,627	16%
Services	6,726	8,381	11,639	16,317	143%
Other	14,342	14,678	15,131	13,304	-7%
Total	32,313	34,927	39,148	41,992	30%

Data Source: ABAG, 1997.

Using "travel time to work" data from the 1990 census, a real estate economics analysis (Williams-Kuebelbeck & Associates, 1994) prepared for the South Bayshore planning area estimated that, at most, five percent of all employed South Bayshore planning area residents work within the area. This indicates a lack of hiring of neighborhood residents by local businesses.

In spite of the relative abundance of jobs in the Bayview-Hunters Point neighborhood, chronic unemployment has been a problem in the area. As shown in Table 3.6-1, in 1990 the unemployment rate in Bayview-Hunters Point was 13.3 percent, more than double the City-wide rate at that time. The unemployment rate among African-Americans in the area in 1990 was even higher, at 17.8 percent. Unemployment for the area's other ethnic groups was lower than the overall South Bayshore planning area rate, but still higher than the City-wide rate of 6.3 percent. Unemployment for Asians was 8.7 percent and for Hispanics, 8.1 percent. Unemployment for South Bayshore planning area Whites (3.3 percent) was substantially lower than both the City-wide and South Bayshore planning area rates. Unemployment is a particularly serious problem for the young. In 1990, half of the unemployed South Bayshore planning area residents were under 30 years of age, and two-thirds of the unemployed African-American residents were under 30 (Jefferson Company, 1995).

Table 3.6-6 shows the number of employed residents in the Bayview-Hunters Point neighborhood for 1990 to 2020, with San Francisco estimates shown for comparative purposes. While the number of employed residents in San Francisco is expected to increase by about 21 percent during this period, the number of employed residents of

Bayview-Hunters Point is expected to increase by 69 percent, with most of this increase expected to occur between 2000 and 2010.

TABLE 3.6-6: EMPLOYED RESIDENTS, SOUTH BAYSHORE PLANNING AREA AND SAN FRANCISCO, 1990-2020

	1990	2000	2010	2020	% Change 1990 to 2020
South Bayshore Planning Area	9,950	11,008	15,040	16,782	69%
San Francisco	391,277	403,637	455,600	473,010	21%

Data Source: ABAG, 1997.

3.6.5 Public Schools

The San Francisco Unified School District (SFUSD) provides public primary and secondary education in the City. The SFUSD operates 18 high schools, 17 middle schools, and 77 elementary schools (San Francisco Unified School District, 1997). Enrollment for the SFUSD during the 1997-98 school year was estimated at 63,127 students (Luk, 1998).

There are six public elementary schools in the South Bayshore planning area and vicinity, four of which also offer pre-kindergarten instruction. In September 1995, the former Jedidiah Smith Elementary School in the South Bayshore planning area reopened as the Gloria Davis Middle School. Before that time, most children within this age group were bused to middle schools outside the South Bayshore planning area. Thurgood Marshall High School is within the South Bayshore planning area, while the Philip Burton High School, located west of U.S.101, is outside of the planning area. Students who live in the South Bayshore planning area are within the attendance boundaries for both of these high schools (San Francisco Unified School District, 1995).

Children throughout the South Bayshore planning area are bused to achieve racial integration. In 1982, a Federal court order was issued stating that each San Francisco public school was required to have at least four ethnic groups represented in its student population and that no more than 45 percent of the student population at each school could be of any one ethnic group. At alternative schools in the SFUSD, the proportion dropped to 40 percent. Where a child goes to school depends on a combination of factors: the attendance area in which the child lives, the school preference expressed by the child's family, the racial make-up of the child's neighborhood school, and the racial composition of the school selected by the family (Anderson, 1998).

Elementary schools throughout the SFUSD are generally operating at full capacity. A new state law limits class size to 20 students for kindergarten through third grade. Therefore, the SFUSD has had to use much of its previous excess capacity and, at many schools, bring in portable buildings to accommodate the additional classes resulting from class size reduction. At the middle and high school level, some schools in the SFUSD are at capacity or overcrowded, while others are under-enrolled (Anderson, 1998).

ABAG estimates that there were 6,738 school-aged children (5 to 19 years of age) in the South Bayshore planning area in 1990, representing 24.1 percent of the area's population. In contrast, only 13.4 percent of San Francisco's population was estimated to be of school age in 1990. By 2020, however, ABAG projects that the proportion of school-aged children in the South Bayshore area will be similar to that in the City as a whole, primarily because of minimal growth projected for the school-aged population in the planning area (in part because of the relatively high cost of family housing in San Francisco compared with other parts of the region). Between 1990 and 2020, the number of school children in the South Bayshore area is expected to increase from 6,738 to 7,051, an increase of 5 percent. For the City as a whole, the number of children in this age group is expected to increase by 11 percent during this same time period. As a percentage of the South Bayshore area's population, school-aged children will decrease from 20.6 percent in 2000 to 18.3 percent in 2010. In 2020, school-aged children are expected to represent only 16.7 percent of the South Bayshore population, compared with 13.6 percent of the City-wide population (ABAG, 1998a).

3.7 HAZARDOUS MATERIALS AND WASTE

This section describes existing hazardous materials management activities, applicable hazardous materials and waste regulations, contamination present at HPS and the Installation Restoration Program (IRP), basewide environmental compliance programs, Navy standard operating procedures during remediation, and the context of HPS hazardous materials and waste as related to the South Bayshore planning area.

Hunters Point Shipyard has been the site of industrial operations using hazardous materials since it first became a shipyard in 1868. Refer to Chapter 1, Section 1.2 for a description of the history of the HPS property. It operated as a U.S. Navy military installation from the late 1930s until 1974. Navy operations at HPS included ship building and maintenance, as well as research and testing work. These general operations entailed activities such as machine shop work, fuel storage and transport, metal fabrication and plating, and battery shop work. Fuels, lubricants, paints, solvents and other industrial chemicals were in use at HPS throughout most of its history as a military installation. Following the cessation of Navy operations in 1974, HPS was leased to tenants that used a variety of hazardous materials and generated hazardous wastes. A description of tenant operations is provided below in Section 3.7.1.

The management of hazardous wastes and materials is regulated by Federal, state, and local authorities. The U.S. Navy is responsible for environmental compliance for Navy operations and environmental remediation required at HPS. The San Francisco Department of Public Health (DPH) is responsible for enforcing regulations with respect to tenant activities.

HPS was placed on the National Priorities List (NPL), commonly known as Superfund, by U.S. EPA in 1989. Sites on the NPL are prioritized for cleanup under U.S. EPA oversight following a formal process that involves state and local agencies, as well as public participation. To comply with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Resource Conservation and Recovery Act (RCRA), and other regulatory requirements, the Navy has signed a Federal Facilities Agreement (FFA) (see Section 3.7.2) and established an IRP, which includes a procedural framework and schedule for ensuring that the environmental impacts associated with past Navy activities are investigated and remediated to protect human health and the environment. More details of the regulatory and remediation process are provided below in Section 3.7.2 and in Chapter 1, Section 1.4.5.

For purposes of investigation and remediation, HPS has been divided into six parcels (designated Parcels A through F), with each parcel treated as an individual unit (Figure 3.7-1). The status of the IRP is described for each parcel in Section 3.7.3. The ROI for hazardous materials and waste is the HPS property. Hazardous materials sites in the surrounding neighborhood are acknowledged in Section 3.7.6.

3.7.1 Existing Hazardous Materials Management

Navy Operations

Navy operations at HPS are minimal, restricted to approximately 40 staff at the caretaker site office, police, and fire departments. Small amounts of hazardous wastes generated by routine Navy operations (waste oil, spent painting materials, etc.) are disposed of in accordance with the Navy's Large Quantity Generator Permit for HPS issued by U.S. EPA.

Tenant Operations

Since 1974, many of the buildings at HPS have been leased to private tenants and Federal tenants. Current uses include storage space, art studios, offices, machine workshops, woodworking shops, automobile restoration garages, and recreational vehicle parking. In 1997, the Navy conducted a hazardous materials survey of building tenants to collect information on hazardous materials use (U.S. Navy, 1998e). A tenant survey questionnaire was developed to obtain the following data:

- Quantities of hazardous materials equal to or in excess of 2,200 pounds (lb) (1,000 kg) stored, released, or disposed of for one year or more.
- Quantities of hazardous materials equal to or in excess of their CERCLA reportable quantities stored, released, or disposed of for one year or more.
- Petroleum products stored, released, or disposed of.

The tenant survey focused on buildings and areas leased by the Navy. Approximately 55 buildings and their surrounding areas were inspected, along with Drydock 4 and the railroad right-of-way. The information collected during the survey was limited to that provided by the interviewees and observations by the survey team during building inspections. Building tenants were asked, but not required, to provide lists of hazardous materials and quantities used in building operations, waste manifests, material safety data sheets, waste profiles, analytical reports, and waste management reports.

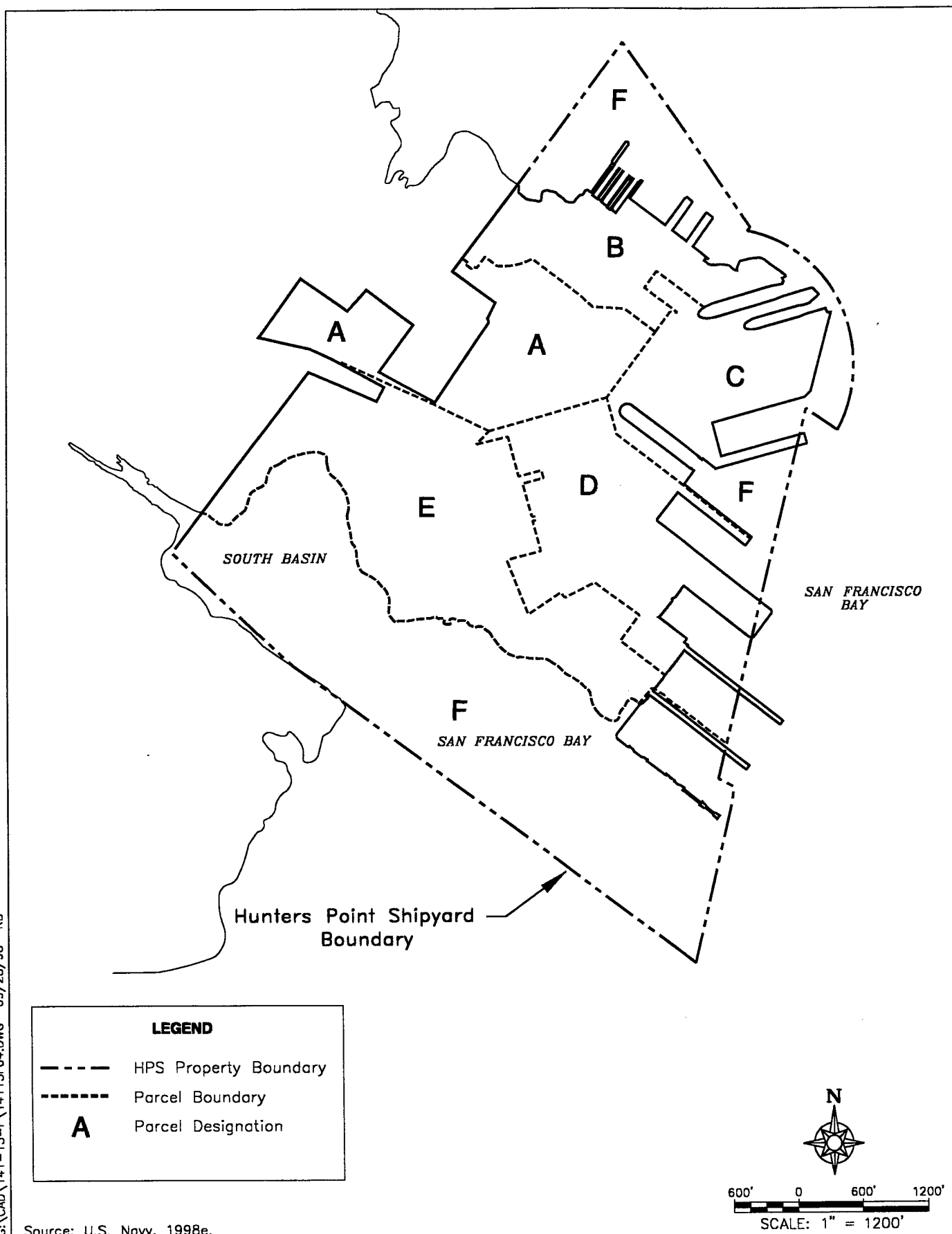


Figure 3.7-1: Hunters Point Shipyard Remediation Parcels

Types of hazardous materials reported in the 1997 survey include paints, solvents, and petroleum hydrocarbons. Astoria Metals, which leases Buildings 301, 367, 372, and Drydock 4 for ship repair and recycling operations, reported the highest quantities of stored hazardous materials: 35,000 lb (15,910 kg) of lead and 30,000 lb (13,636 kg) of asbestos. Large quantities of petroleum hydrocarbons were reported stored by Smith-Emery, Co. in Building 114 (offices and a workshop) (2,644 lb, or 1,202 kg); Ermico Enterprises in Building 275 (an aluminum casting shop) (6,433 lb, or 2,924 kg); and Sierra Western Equipment in Building 411 (workshop, offices, and storage area) (4,622 lb, or 2,101 kg). The majority of other hazardous materials reported in the survey were estimated in quantities less than 220 lb (100 kg). Table B-34 in Appendix B provides complete survey information (from November 1997) on hazardous materials used by HPS tenants.

As a condition of their leasing agreements, tenants are responsible for the management and appropriate disposal of their hazardous materials and wastes. Tenants are required to comply with all applicable laws and regulations pertaining to the use, treatment, storage, disposal, and transportation of hazardous materials and wastes. In addition, they are required to maintain and make available to the Navy all records, inspection logs, and manifests that document compliance.

As a part of each tenant's hazardous material and management program, the Navy requires that the tenant prepare, implement, and enforce a Hazardous Materials Management Plan (HMMP) (often referred to as a Hazardous Materials Business Plan, or Business Plan). As required by California Health & Safety Code § 25500 *et seq.* and Title 19 of the California Code of Regulations (C.C.R.) Division 2, Chapter 4, Article 4 § 2729, the HMMP includes the following components:

- Business owner/operator information
- Inventory of hazardous materials
- Annotated site map
- Emergency response procedures
- Training program

The administering agency responsible for enforcing hazardous materials and waste handling regulations is the San Francisco DPH, which is provided copies of the HMMPs by the tenants. The DPH has been given written authorization by the Navy to inspect tenant facilities and enforce applicable regulations at their discretion.

3.7.2 Regulatory Framework

The following is a discussion of the regulatory framework that applies to hazardous materials and waste at HPS.

Federal Facilities Agreement and Installation Restoration Program

The Navy, U.S. EPA Region 9, Regional Water Quality Control Board (RWQCB), and the Department of Toxic Substances Control (DTSC) signed an FFA (U.S. Navy, 1991) for HPS to meet regulatory requirements, establish a single cleanup program agreed upon by all responsible regulatory agencies, and ensure that cleanup occurs in a timely manner. The FFA establishes a procedural framework and schedule for ensuring that environmental impacts associated with past Navy activities at HPS are investigated and remediated to protect human health and the environment pursuant to the following statutes and associated regulations:

- CERCLA, 42 U.S.C. § 120(a)(4), § 120(f), and § 121.
- RCRA, 40 C.F.R. Part 280 § 6001(8)(h), § 6, and § 4(u)(v).
- National Contingency Plan (NCP), 40 C.F.R. § 300.1 *et seq.*
- Defense Environmental Restoration Program (DERP), 10 U.S.C. § 2701 *et seq.*
- Executive Order 12580, *Superfund Implementation*.
- Applicable state laws.

Under the FFA, the Navy has agreed to implement and report on a number of tasks for the site as part of the IRP, as described below. The status of these tasks for each HPS parcel is discussed in the Summary of Contamination and the IRP Process (Section 3.7.3).

- **Preliminary Assessments (PA) and Site Inspections (SI).** PA/SI investigations are conducted to detect risks to human health or the environment posed by areas that are identified as possibly being contaminated with hazardous materials. The PA process includes interviews with site personnel, reviews of documentation, and site visits. If further investigation seems required, an SI is performed. The SI uses findings of the PA and involves limited collection of samples from the site, with findings indicated in SI reports. If the findings of the PA or the SI indicate that the likelihood of risk from contamination is low, and if U.S. EPA, DTSC, and RWQCB concur, no further investigation is conducted at the site. If the PA/SI process indicates that contamination is probably present at a site, the site is designated for further investigation under the IRP.

Occasionally, a site may be so obviously contaminated that it does not require a PA/SI prior to undertaking a remedial investigation (RI). Seventy-eight Installation Restoration (IR) sites at HPS have been identified for investigation under the IRP.

- **Remedial Investigation.** An RI is the CERCLA-required study of a site where the presence of hazards to human health and the environment is considered likely. The RI report addresses the type and extent of contamination and estimates of the level of risk to human health and the environment posed by chemicals detected at the site.

Before starting field work for an RI, the Navy conducts interviews with local officials, community residents, public interest groups, and other interested or affected parties to solicit their concerns and information needs and to learn how and when citizens would like to be involved in the CERCLA process. The Navy also prepares a formal Community Relations Plan (CRP) specifying the community relations activities that the Navy expects to undertake during the remediation process.

- **Feasibility Study.** A Feasibility Study (FS) is conducted for sites where RI data indicate that contamination poses unacceptable levels of risk to human health and the environment. The FS evaluates various remedial technologies that can be used to reduce site risk to acceptable levels, including comparison of ease of implementation, cost-effectiveness, and the long- and short-term effectiveness of the technologies in remediating the site to a condition that is protective of human health and the environment.

In accordance with the FFA, regulatory agencies have 45 days to review the draft FS and 30 days to review the draft final FS. The Navy informs and involves the public at each step of the CERCLA process. The public is encouraged to comment during the review periods.

- **Proposed Plan.** The Proposed Plan summarizes findings of the RI and gives recommendations for remediation based on the FS. The Navy publishes a notice of availability of the Proposed Plan in a major local newspaper of general circulation and makes the plan, as well as supporting analysis and information, available in the Administrative Record. The Navy also provides the community not less than 30 calendar days to submit written and oral comments on the Proposed Plan and holds a public meeting at or near the site. The Navy prepares a written summary of significant comments, criticisms, and new relevant information submitted during the public comment period and responds to each issue.

After the Proposed Plan is presented to regulatory agencies and the public, agreements on remedial work and the schedule of such work is documented in a CERCLA Record of Decision (ROD). The CERCLA ROD takes into account public comments and community concerns and includes the Navy's responses to these comments.

- **Remedial Design/Remedial Action.** Site remedies selected from the Proposed Plan are executed. Prior to initiation of the remedial design, the lead agency (Navy) reviews the CRP to determine whether it should be revised to include further public involvement activities.
- **Operation and Maintenance.** Remediation systems are operated and maintained in accordance with the remedial action design.
- **Information Repository and Administrative Record.** Information repositories for HPS have been established and maintained in the Hunters Point neighborhood at the San Francisco Public Library, Anna E. Waden Branch, 5075 Third Street and at the Main Library at Larkin and Grove Streets. The Main Library repository includes copies of all major documents pertaining to environmental work at HPS. The Administrative Record is maintained at Environmental Field Activity (EFA) West in San Bruno.
- **Public Participation and Community Relations.** In the late 1980s, the Navy formed a Technical Review Committee (TRC) consisting of community members and representatives of regulatory agencies. The TRC met to discuss environmental issues pertaining to HPS. In 1993, pursuant to the DERP, 10 U.S.C. § 2705(d), the Navy formed a Restoration Advisory Board (RAB), which replaced the TRC. The RAB is composed of members of the community, the Navy, and the regulatory agencies. The RAB meets monthly to discuss environmental progress at HPS. As described above, the Administrative Record, newsletters, and meetings are designed to ensure public involvement in the IRP process.

Other Federal/State Programs

The FFA and IRP summarized above define specific ways in which general environmental programs are addressed. These programs are described below.

Comprehensive Environmental Response, Compensation, and Liability Act. Originally passed in 1980, CERCLA, 42 U.S.C. § 9601 *et seq.*, created national policies and procedures to identify and remediate sites

contaminated by the release of hazardous substances. CERCLA formalized the process for identifying sites and prioritizing the remediation of sites through the NCP. The NCP contains criteria for evaluating sites that provide the basis for the PA/SI. Sites given a priority ranking based on U.S. EPA's hazard ranking system are placed on the NPL. Facilities placed on the NPL are commonly referred to as "Superfund" sites. As noted previously, HPS was placed on the NPL in 1989.

Superfund Amendments and Reauthorization Act (SARA). In 1986, the U.S. Congress amended CERCLA to increase the funding for Superfund, modify contaminated site cleanup criteria, revise settlement procedures, provide a regulatory program for leaking underground storage tank cleanups, and provide an emergency planning and community right-to-know program, implemented through the Emergency Planning and Community Right-to-Know Act (EPCRA) (Pub. L. 99-499, Title III). EPCRA, which is codified at 42 U.S.C. § 11001, established the mandatory Federal standards for state community right-to-know programs and toxic chemical release reporting by manufacturers. Most of the specific requirements of EPCRA have been integrated into the California Community Right-to-Know Law (Assembly Bill 2189).

Resource Conservation and Recovery Act. In response to the need to more closely regulate the ongoing handling, storage, transportation, and disposal of hazardous wastes, the U.S. Congress passed RCRA, 42 U.S.C. § 6901 *et seq.*, in 1976. RCRA contains the Federal regulations for operating hazardous waste storage, treatment, and disposal facilities. In 1972, before RCRA was enacted, California passed the Hazardous Waste Control Law (HWCL), 22 C.C.R., Chapter 6.5. This law provides regulations that equal or exceed the Federal standards set by RCRA for hazardous waste management. The responsible agency for enforcing RCRA and HWCL is the California Department of Toxic Substances Control (DTSC).

Community Environmental Response Facilitation Act. Congress amended CERCLA in 1992 through the passage of the Community Environmental Response Facilitation Act (CERFA), 42 U.S.C. § 9601 note (West, 1995). The purpose of CERFA is to expedite the identification of uncontaminated real property within closing Federal facilities that offers the greatest opportunity for reuse and redevelopment. Uncontaminated, or "CERFA-eligible," property is defined as any real property on which no hazardous substances and no petroleum products were stored for one year or more, were known to have been released, or were disposed of. CERFA clarifies that "all remedial action has been taken" if construction and installation of an approved remedial design have been completed and the remedy has

been demonstrated to the U.S. EPA Administrator to be operating properly and successfully. Carrying out long-term pumping and treatment or operation and maintenance after the remedy has been demonstrated to be operating properly and successfully does not preclude the transfer of property.

Corrective Action Plan for Petroleum-Related Contamination

Petroleum compounds are specifically excluded from the CERCLA regulatory process (42 U.S.C. 9601 § 101, Part 14). The San Francisco Bay RWQCB is the lead regulatory agency for petroleum-contaminated sites. The RWQCB requires the development and implementation of a Corrective Action Plan (CAP) where groundwater has been contaminated or where petroleum contamination in soils has the potential to impact groundwater at levels above regulatory thresholds.

City and County of San Francisco Programs

The City's programs apply to property that has been leased to tenants or conveyed to the City. The City's Hazardous Materials Ordinance (164-92) requires that businesses or institutions storing hazardous materials with a total quantity equal to or greater than 55 gallons (208 liters) of liquids in containers of 1 gallon (3.7 liters) or more; 500 lb (227 kg) of solids in containers of 25 lb (11 kg) or more; or 200 cubic feet (5.6 cubic m) of compressed gases in containers of 10 cubic feet (0.3 cubic m) or more, register with the San Francisco DPH, Bureau of Environmental Management. Registration requires that businesses and institutions provide information concerning chemical inventories, emergency plans, and worker safety procedures.

Under the California Health & Safety Code § 25404 *et seq.*, the DPH, as the Certified Unified Program Agency (CUPA) for San Francisco, carries out many of the state's hazardous materials and waste responsibilities. The California Health & Safety Code and the City's Hazardous Waste Ordinance allow the DPH to inspect generators of hazardous waste, keep records, issue notices of violation when necessary, and collect fees. DPH also enforces state underground storage tank (UST) laws (California Health & Safety Code § 25280 *et seq.*) and laws regulating highly toxic materials, for which risk management plans are required (California Health & Safety Code § 25531 *et seq.*).

Article 20 § 1000 *et seq.* of the San Francisco Public Works Code, entitled "Analyzing the Soil for Hazardous Waste," commonly known as the Maher Ordinance, requires building permit applicants proposing to disturb 50 cubic yards (38 cubic m) of soil or more on sites located bayward of the San Francisco Bay 1851 high tide line to conduct environmental assessments of that soil for possible hazardous

waste. Soil samples must be collected at the depths and locations of site excavations, including basements, utility trenches, elevator pits, and foundations. When hazardous wastes are found in excess of Federal or state standards, the permit applicant is required to submit a site mitigation plan prepared by a qualified expert to the Director of Public Health and the Director of Public Works. The permit applicant must implement the site mitigation plan and certify completion before any building permits are issued. HPS is within the geographic area covered by this ordinance, and all development that would disturb 50 cubic yards (38 cubic m) of soil or more must comply with Article 20.

The Bureau of Environmental Regulation and Management in the Department of Public Works implements the City's Industrial Waste Ordinance (19-92), which regulates the quality of industrial wastes and construction dewatering discharged into the City's combined sewer system. The ordinance also prohibits discharge of hazardous wastes into the sewer/stormwater system.

Incidents involving known hazardous materials are handled by the San Francisco Fire Department's Hazardous Material Response Unit. The San Francisco Fire Code (as well as the San Francisco Health Code) establishes a system for permitting and monitoring the use and disposal of hazardous materials. To minimize the danger from fire involving hazardous materials, the Fire Department Hazardous Materials Section works with the Health Department to identify the hazardous materials stored in San Francisco.

Regulation of Specific Materials

Polychlorinated Biphenyls

The disposal of polychlorinated biphenyls (PCBs) is regulated under the Toxic Substances Control Act (TSCA), 15 U.S.C. § 2601 *et seq.*, which banned the manufacture and distribution of PCBs, except for PCBs used in enclosed systems. By definition, PCB equipment contains PCB concentrations of 500 parts per million (ppm) or more, whereas PCB-contaminated equipment contains PCB concentrations between 50 ppm and 500 ppm. The U.S. EPA, under TSCA, regulates the removal and disposal of all sources of PCBs containing 50 ppm or more. The regulations are more stringent for PCB equipment than for PCB-contaminated equipment. Federal regulations for controlling PCBs are found at 40 C.F.R. Part 761. California regulations (22 C.C.R.) are more stringent than their Federal equivalents. These regulations define a waste fluid containing 5 ppm PCBs or more as hazardous.

Asbestos

Asbestos-containing material (ACM) remediation is regulated by the U.S. EPA, the Occupational Safety and Health Administration

(OSHA), and the State of California. Asbestos fiber emissions into the ambient air are regulated by Section 112 of the CAA, 42 U.S.C. § 7412, which established the National Emission Standards for Hazardous Air Pollutants (NESHAP). NESHAP regulations address the demolition or renovation of buildings with ACM. TSCA and the Asbestos Hazardous Emergency Response Act (AHERA), 15 U.S.C. § 2601 note (West, 1998), provide the regulatory basis for handling ACM in school buildings. OSHA regulations cover worker protection for employees who work around or remediate ACM.

These regulations prohibit emissions of asbestos from asbestos-related manufacturing, demolition, or construction activities; require medical examinations and monitoring of employees engaged in activities that could disturb asbestos; specify precautions and safe work practices that must be followed to minimize the potential for release of asbestos fibers; and require notice to Federal and local government agencies prior to beginning renovation or demolition that could disturb asbestos.

Lead

The HPS Lead-based Paint Program was developed in compliance with the Lead-based Paint Poisoning Prevention Act, 42 U.S.C. § 4801 note (West, 1995), and Residential Lead-based Paint Hazard Reduction Act of 1992, 42 U.S.C. § 4851 note (West, 1995). U.S. Department of Defense (DOD) policy regarding lead-based paint (LBP) is to manage it in a manner protective of human health and the environment and to comply with all applicable laws and regulations. For residential housing constructed between 1960 and 1978, the property must be inspected for LBP, and the results of the inspection must be revealed to prospective purchasers or transferees. For residential dwellings constructed prior to 1960, LBP hazards must also be abated.

DTSC has considered a release to soil of LBP from DOD buildings or structures to be a CERCLA hazardous substance release. The position of DTSC and U.S. EPA has been that all structures constructed prior to 1978 should be evaluated to determine if elevated lead levels exist in soils and if they could cause a risk to future users. The Navy's policy for LBP remediation in nonresidential areas has been to comply with CERCLA in the same manner and to the same extent, both procedurally and substantively, as any non-governmental entity. The Navy and U.S. EPA are discussing an agreement to resolve these differing interpretations.

OSHA's Lead Construction Standards, 29 C.F.R. § 1926.62, establish a maximum safe exposure level for the following types of construction work during which exposure could occur: demolition or salvage of structures where lead or materials containing lead are present;

removal or encapsulation of materials containing lead; and new construction, alteration, repair or renovation of structures or materials containing lead. Chapter 36 of the San Francisco Building Code establishes requirements for removing LBP on building exteriors. It is implemented by the Department of Building Inspection.

Storage Tanks

Underground Storage Tanks

USTs are subject to Federal regulations of RCRA, 40 C.F.R. Part 280, as mandated by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6901 note (West, 1995). The State of California has adopted regulations under 23 C.C.R., Div. 3, Chapter 16. California regulations are more stringent than the Federal regulations and require secondary containment on both tank and piping systems installed after January 1, 1984. While state-wide oversight of the UST program is assigned to the various RWQCBs, in San Francisco, the DPH, Environmental Health Services Division, is the local agency responsible for enforcing the UST program for San Francisco, including HPS. The DPH oversees the removal of tanks in compliance with Article 21 of the San Francisco Health Code.

Aboveground Storage Tanks

Aboveground storage tanks (ASTs) are regulated by the U.S. EPA under the Oil Pollution Prevention regulation, 40 C.F.R. Part 112 of 1973, which requires the preparation of a Spill Prevention, Control, and Countermeasure (SPCC) Plan. In California, ASTs are regulated under California Health and Safety Code, Division 20, Section 6.7, the Uniform Fire Code, and the National Fire Protection Association regulations. The mechanism used for cleanup and prevention of spills is Senate Bill (SB) 1050 of January 1990.

Worker Safety

The California Department of Occupational Safety and Health Administration (CAL OSHA) is responsible for assuring worker safety in handling hazardous materials in the workplace. CAL OSHA assumes primary responsibility for developing and enforcing standards for safe workplaces and work practices. A Health and Safety Plan (HASP) must be prepared prior to commencing any work at a contaminated site or involving disturbance of building materials containing hazardous substances, to protect workers and the public from exposure to potential hazards.

There are numerous workplace-safety requirements to protect construction workers from residual contaminants that may be present in soil or groundwater. For example, pursuant to 8 C.C.R. § 5194, workers must be informed about hazardous substances that may be

encountered in the workplace. The Injury Illness Prevention Program (8 C.C.R. § 3202) requires that workers be properly trained to recognize workplace hazards and to take appropriate steps to reduce potential risks due to such hazards. This would be particularly relevant if previously unidentified contamination or buried hazards were encountered. Compliance with CAL OSHA standards for hazardous waste operations, 8 C.C.R. § 5192, is required for individuals involved in hazardous investigation or remediation work.

Hazardous Materials Transportation

Hazardous materials that could possibly be excavated from remediation and/or construction activities at HPS could require off-site transportation for disposal and/or treatment. The California Highway Patrol and Caltrans are the state agencies with primary responsibility for enforcing Federal and state regulations related to transportation of hazardous materials, including contaminated soil, within California. The U.S. Department of Transportation regulates the transportation of hazardous materials, including contaminated soil, between states. They also respond to hazardous materials transportation emergencies. These agencies determine container types to be used and license hazardous waste haulers for hazardous waste transportation on public roads.

Contaminated Groundwater

Discharges to the sanitary sewer system are regulated by the San Francisco Department of Public Works through Article 4.1 of the Public Works Code, the Industrial Waste Ordinance. Groundwater from dewatering and/or cleanup activities must meet specific treatment standards before being discharged to the sewer system under permits issued by the Department of Public Works. Groundwater discharged directly to the Bay requires a National Pollutant Discharge Elimination System (NPDES) permit from the San Francisco RWQCB. Groundwater proposed for discharge from HPS into the Bay must meet strict water quality standards established by NPDES permits and may have to be treated before discharge into the Bay to avoid degrading the Bay's water quality. Dischargers into the Bay are also required to meet stringent monitoring standards established by NPDES permits to ensure compliance under this permitting system.

Petroleum hydrocarbons in groundwater that are not commingled with CERCLA-regulated substances are addressed under a CAP, as described above.

3.7.3 Summary of Contamination and the IRP Process

Introduction

This section summarizes the status of the HPS IRP by parcel. Soil and groundwater in some locations have been contaminated by petroleum-based fuels, solvents, heavy metals, and radium. PCBs were present in electrical equipment that occasionally leaked. Buildings may contain LBP and ACM. In addition, some soil materials contain naturally occurring asbestos derived from the serpentinite bedrock that underlies the site.

These contaminants could pose a risk to human health or the environment through inhalation, ingestion, or skin contact with one or more contaminants in soil and groundwater. Some contaminants could pose a risk to water or ecological resources through migration of contaminated groundwater or surface water to the Bay or wetlands.

Through the PA/SI process, the Navy has identified 78 sites within Parcels A through F that require further investigation. The IR sites are shown on Figure 3.7-2; the contaminants of concern identified during the IRP process are indicated on Table 3.7-1. Specific IR site descriptions, suspected materials used, results of investigations, and recommendations developed in the RIs for each parcel are summarized in Table B-35 in Appendix B.

The physical setting of HPS as related to soil and groundwater issues is described below. The risk assessment process and remediation standards used to evaluate soil and groundwater contamination at HPS are then described. Following that description is a summary of the contamination present and remediation status for each of the six parcels. The summary includes existing soil and groundwater contamination, results of the human health and ecological risk assessments, completed or ongoing interim remedial actions, and proposed remediation options.







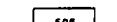

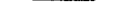

Physical Setting

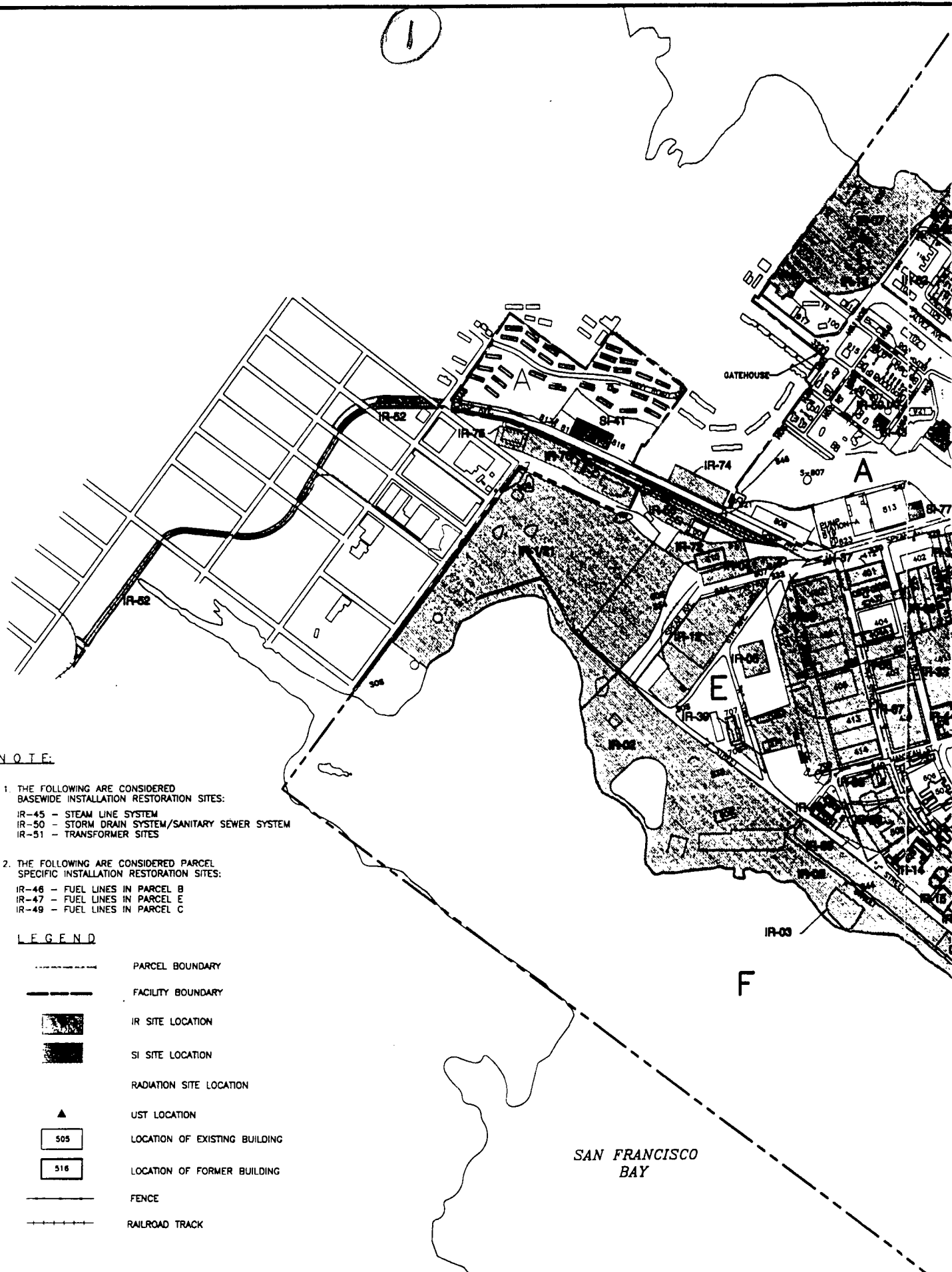
The geologic materials underlying HPS include bedrock and a variety of relatively loose surficial deposits, including fill and Bay Mud. The bedrock is composed of a mixture (melange) of sandstone, shale, chert, altered volcanic rocks, and serpentinite. These rocks occupy the higher elevations, cropping out along the ridge that forms Hunters Point Hill (see Figures 3.8.1 and 3.8.3). Serpentinite at HPS has been found to contain chrysotile, a naturally-occurring form of asbestos, and some soil and fill materials at the site contain asbestos derived from these rocks. Soils and fill materials occupying the lower elevations generally consist of fine-grained sands and silts developed from weathering of bedrock materials or placed as fill from dredging operations and on-site excavation and grading.

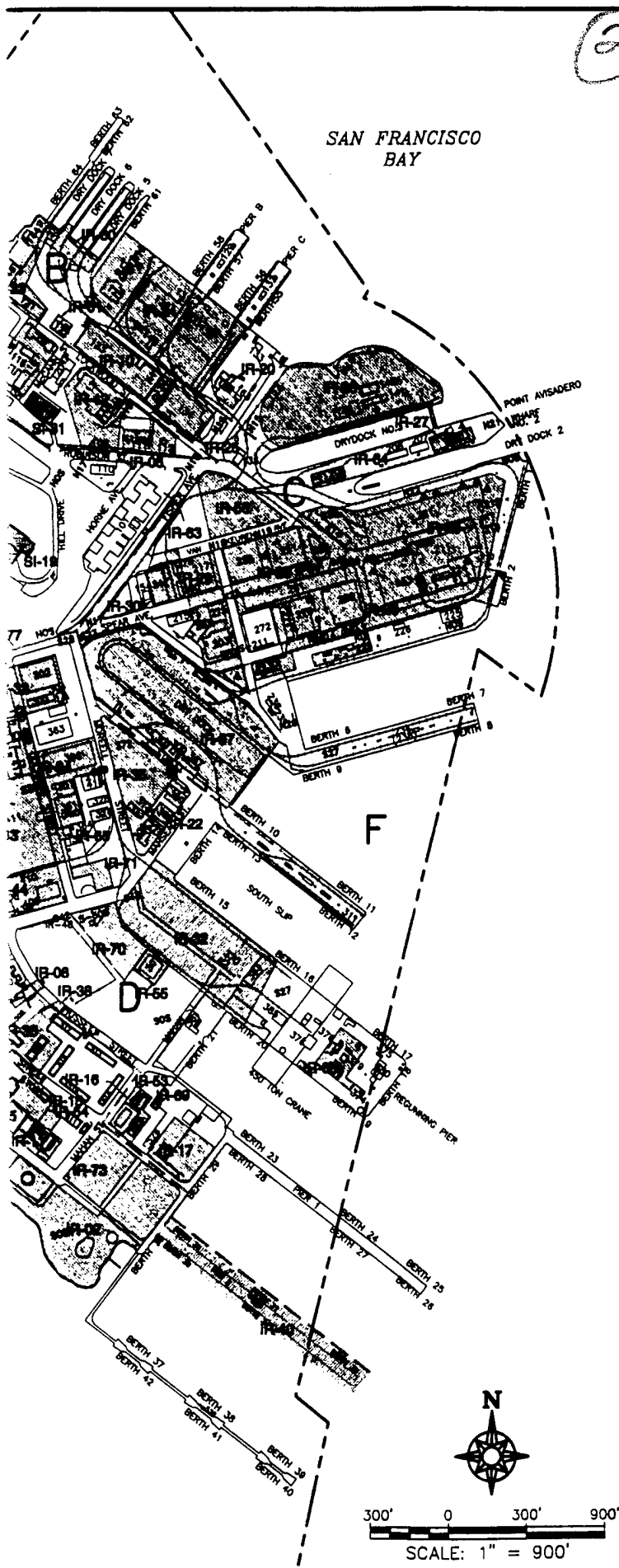
NOTE:

1. THE FOLLOWING ARE CONSIDERED
BASEWIDE INSTALLATION RESTORATION SITES:
IR-45 - STEAM LINE SYSTEM
IR-50 - STORM DRAIN SYSTEM/SANITARY SEWER SYSTEM
IR-51 - TRANSFORMER SITES
2. THE FOLLOWING ARE CONSIDERED PARCEL
SPECIFIC INSTALLATION RESTORATION SITES:
IR-46 - FUEL LINES IN PARCEL B
IR-47 - FUEL LINES IN PARCEL E
IR-49 - FUEL LINES IN PARCEL C

LEGEND

	PARCEL BOUNDARY
	FACILITY BOUNDARY
	IR SITE LOCATION
	SI SITE LOCATION
	RADIATION SITE LOCATION
	UST LOCATION
	LOCATION OF EXISTING BUILDING
	LOCATION OF FORMER BUILDING
	FENCE
	RAILROAD TRACK





IR Site No. REMEDIATION AREA DESIGNATION

- 1 Industrial Landfill (See IR Site 21 also)
- 2 Bay Fill
- 3 Oil Reclamation Ponds
- 4 Scrap Yard
- 5 Old Transformer Storage Yard
- 6 Tank Farm
- 7 Sub-Base Area
- 8 PCB Spill Area at Former Building 503
- 9 Pickling and Plate Yard
- 10 Battery and Electroplating Shop (Building 123)
- 11 Power Plant Area (Building 521)
- 12 Disposal Trench Area
- 13 Old Commissary Area
- 14 Oily Liquid Waste Disposal Area
- 15 Oily Waste Ponds and Incineration Tank
- 16 Container Storage Site
- 17 Drum Storage and Disposal Site
- 18 Waste Oil Disposal Area
- 19 Officers Club (Building 901)
- 20 Rubber Shop (Building 158)
- 21 Area Southwest of Building 801 (See IR-1 Site also)
- 22 Shop Service Buildings 368 and 369
- 23 Buildings 146, 146, 161, and 162
- 24 Buildings 124, 125, 128, and 130
- 25 Machine Shop (Building 134)
- 26 Nondestructive Testing Lab
(Building 157 and Area North of Dry Dock 3)
- 27 Pump and Compressor Plant (Building 206)
- 28 Buildings 211/253, 219, 229, 230, 231, 258, 270, 271, 273, and 281
- 29 Buildings 203, 217, 276, 279, 280, and 282
- 30 Forge Shop (Building 241)
- 31 Building 114
- 32 Regunning Pier and Building 383
- 33 Buildings 116, 125, 302, 302A, 304, 364, 411, 417, and 418, 424
- 34 Buildings 351 and 366
- 35 Buildings 274, 306, 313, 313A, 322, 372 and the area bounded by Manseau, Morrell and E Streets
- 36 Buildings 371, 400, 404A, 405, 406, 413, 414, 704, 710
- 37 Buildings 401, 423, 436, 436, and 437
- 38 Building 500
- 39 Building 505
- 40 Building 527 and Pier 2
- 41 Buildings 816 and 818
- 42 Buildings 109, 113, and 113A
- 43 Gardening Tool House (Building 906)
- 44 Area Near Buildings 408, 409, 410, and 438
- 45-51 See Listing for Facility-Wide Utility Sites
- 52 Railroad Right-of-Way (Off site west of facility)
- 53 Building 525 and 530
- 54 Building 511A
- 55 Building 307 and Surrounding Area
- 56 Railroad Yard and Track Southwest of Crisp Avenue
- 57 Dry Dock 4 Area
- 58 Scrap Yard North of Building 258
- 59 Parcel A Groundwater Investigation (Not shown on map)
- 59JAI Parcel A Jerrold Avenue Investigation
- 60 Dry Docks 5, 6, and 7
- 61 Substation V (Building 122)
- 62 Submarine Training (Buildings 115 and 116)
- 63 Former Building 278
- 64 Substation A (Building 206)
- 65 Carbon Dioxide Refilling Station (Building 324)
- 66 Office and Storehouse (Building 407)
- 67 Sheet Metal Shop (Building 439)
- 68 Area North of Building 378
- 69 Buildings 523 and Associated Metal Shed
- 70 Area Northeast of Building S-308
- 71 Crane Yard
- 72 Building 810 Area
- 73 Asphalt Batch Plant
- 74 Building 815 (formerly used defense site)
- 75 Building 820 (formerly used defense site)
- 76 Area Surrounding Buildings 830 and 831 (formerly used defense site)
- 77 UST Site S-812 at Building 813
- 78 Parcel F Subtidal Area

FACILITY-WIDE UTILITY SITES NOT SHOWN

- 45 Steam Lines
- 46 Fuel Distribution Lines (Tank Farm)
- 47 Fuel Distribution Lines (Tank S-505)
- 48 Suspected Steamlines (Building 503)
- 49 Fuel Distribution Lines (Buildings 503)
- 50 Storm Drain and Sanitary Sewers
- 51 Former Transformer Locations

Figure 3.7-2: Installation Restoration Program Sites

TABLE 3.7-1: IR SITES AND CONTAMINANTS

SITE	AREA DESIGNATION	SOIL	GROUNDWATER
(1)			
PARCEL A			
SI-19	Building 901	Contaminant removed	NA
SI-41	Buildings 816, 818	Contaminant removed	NA
SI-43	Building 906	Contaminant removed	NA
SI-51	Former Transformer sites	Contaminant removed	NA
IR-59	Groundwater	Contaminant removed	TPH-MO
IR-59 JAI	Jerrold Ave. Investigation	Contaminant removed	NA
SI-77	UST	Tank removed	Metals, SVOCs
(AOC-77)			
PARCEL B			
IR-6	Tank Farm	Metals, PAHs, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, SVOCs, TPH-D, VOCs
IR-7	Sub-Base Area	Metals, PAHs, TOG, TPH-D	Metals
IR-10	Battery and Electroplating Shop	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-G, TRPH, VOCs	Metals, PAHs, SVOCs, TOG, TPH-D, VC
IR-18	Waste Oil Disposal Area	Metals, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, PAHs, TOG, VOCs
IR-20	Building 156	Metals, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, PAHs, TOG, VOCs
IR-23	Buildings 145, 146, 161, 162, UST	Metals, PAHs, PCBs, PEST, SVOCs, TPH-D, TPH-E, VOCs, TPH-MO, Waste Oil	SVOCs, TPH
IR-24	Buildings 124, 125, 128, 130	Metals, PCBs, SVOCs, TOG, TPH-D, TPH-E, TPH-G, TPH-P, VOCs	Metals, PAHs, TOG, TPH-D, TPH-E, TPH-P
IR-26	Building 157, Area North of Dry Dock 3	Metals, PAHs, PCBs, TOG, TPH-E, TPH-G, TPH-P, VOCs	TBD
SI-31	Building 114	Metals, PAHs	NA
IR-42	Buildings 109, 113, 113A	Metals, PAHs, PCBs, PEST, TOG, TPH-E, TPH-MO	TBD
IR-60	Drydocks 5, 6, 7	Metals, SVOCs, TPH, VOCs	Metals
IR-61	Substation V/Building 122	PCBs, SVOCs, TPH	PCBs, SVOCs, TPH
IR-62	Buildings 115 and 116, UST	PCBs, SVOCs, TPH	PCBs, SVOCs, TPH
PARCEL C			
IR-25	Building 134	Metals, PAHs, PCBs, TOG, TPH-D, TPH-E, VOCs, TPH-MO, TPH-P	TBD
IR-27	Buildings 205, USTs	Metals, SVOCs, TOG, TPH-D, TPH-G	TBD
IR-28	Buildings 211/253, 219, 229, 230, 231, 258, 270, 271, 273, 281, USTs	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, PAHs, PEST, SVOCs, TOG, TPH-G, TPH-P, VOCs
IR-29	Buildings 203, 217, 275, 279, 280, 282, USTs	TPH-MO, TPH-P	TBD
IR-30	Building 241	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-E, TPH-P, VOCs	TBD
IR-57	Drydock 4 Area	CN, Metals, PAHs, PCBs, SVOCs, TOG, TPH-D, TPH-E, TPH-P, VOCs	CN, Metals, PAHs, PEST, PCBs, SVOCs
IR-58	Scrap Yard north of Building 258	Metals, PCBs, SVOCs, TOG, TPH-D, VOCs, Waste Oil	TPH-D, TPH-E, TPH, VOCs
IR-63	Former Building 278	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-E, TPH-P, VOCs	NA
IR-64	Building 206	Metals, PCBs, SVOCs, TPH	NA
		Metals, SVOCs, TPH, VOCs	Metals, PCBs, SVOCs, TPH
			Metals, SVOCs, TPH, VOCs
PARCEL D			
IR-8	PCB Spill Area (Building 503)	Metals, PAHs, PCB, PEST, SVOCs, TOG, TPH-D, VOCs	Metals, PAHs, PCBs, SVOCs, VOCs
IR-9	Pickling and Plate Yard	Metals, PAHs, PEST, TPH-D, VOCs	Metals, PAHs, SVOCs, VOCs
IR-16	Container Storage Area	Metals	ND
IR-17	Drum Storage and Disposal Area	Metals, PAHs, TOG, VOCs	TOG, VOCs
IR-22	Buildings 368, 369, UST	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-E, VOCs	Metals, PAHs, TOG, VOCs
SI-32	Building 383, Regunning Pier	Metals, CN, PAHs, SVOCs, TOG, TPH-D	Metals, VOCs
IR-33	Buildings 302, 302A, 304	Metals, CN, PAHs, PCBs, PEST, RAD, SVOCs, TOG, TPH-D, TPH-E, TPH-G, TPH-MO, VOCs	Metals, TPH
IR-34	Buildings 351, 366	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-MO, VOCs	TBD
IR-35	Buildings 274, 306, 313, 313A, 322, 372, Area bounded by Manseau, Morell and E Streets	Metals, PAHs, PCBs, PEST, TOG, TPH-E, TPH-MO, TPH-P, VOCs	TBD
IR-37	Buildings 401, 423, 435, 436, 437, UST	Metals, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs	TBD
SI-38	Building 500, UST	Metals, SVOCs, TOG, TPH-D, TPH-G	Metals, SVOCs, TPH, VOCs
IR-39	Building 505	Metals, PAHs, PCBs, SVOCs, TOG, TPH-D, TPH-E, TPH-G, VOCs	NA
IR-40	Building 527, Pier 2	Metals, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs	NA
IR-44	Area near Buildings 408, 409, 410, 438	Metals, SVOCs, TPH, VOCs	Metals, SVOCs, TPH, VOCs
IR-53	Buildings 525, 530	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-E, TPH-G, VOCs	TBD
IR-55	Building 307 and surrounding area	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-E, TPH-P, VOCs, TPH	TBD
IR-65	Building 324	PCBs	PCBs
IR-66	Building 407	Metals, SVOCs, TPH	Metals, SVOCs, TPH
IR-67	Building 439	Metals, SVOCs, VOCs, TPH	TPH
IR-68	Building 378	TPH	PCBs, TPH
IR-69	Building 523, Metal shed near Building 523	Metals, PCBs, TPH	Metals
IR-70	Area northeast of S-308	Metals, SVOCs, TPH, VOCs	Metals, SVOCs, TPH, VOCs
IR-71	Crane Area	TPH	TPH

TABLE 3.7-1: IR SITES AND CONTAMINANTS OF CONCERN IDENTIFIED DURING THE IRP

GROUNDWATER	SITE	AREA DESIGNATION	SOIL
	<u>2</u>		
	<u>PARCEL E</u>		
NA	IR-1/21	Industrial Landfill	Metals, PCBs, RAD, SVOCs, TOG, TPH-I
NA	IR-2	Bay Fill	Metals, PCBs, PEST, RAD, SVOCs, TOG
NA	IR-3	Oil Reclamation Ponds	Metals, PAHs, PCBs, SVOCs, TOG, TPH
TPH-MO	IR-4	Scrap Yard	Metals, PAHs, PCBs, SVOCs, TOG, TPH
NA	IR-5	Old Transformer Storage Yard	Metals, PAHs, PCBs, PEST, SVOCs, TOG
Metals, SVOCs	IR-11	Building 521, Power Plant Area	Metals, PCBs, PEST, SVOCs, TOG, TPH
	IR-12	Disposal Trench Area	Metals, CN, PAHs, PCBs, PEST, SVOCs, TPH-G, TPH-MO, VOCs
	IR-13	Old Commissary Area	Metals, PCBs, SVOCs, TOG, TPH-D, TPH
	IR-14	Oil Liquid Waste Disposal Area	Metals, PEST, SVOCs, TOG, TPH-D, TPH
	IR-15	Oil Waste Ponds and Incineration Tank	Metals, PEST, SVOCs, TOG, TPH-D, TPH
	IR-36	Buildings 371, 400, 404A, 405, 406, 413, 414, 704, 710, parts of Area IV, UST	Metals, PAHs, PEST, PCBs, SVOCs, TOG, TPH-MO, TPH-P, VOCs
PH-G, VOCs	SI-38	Buildings 506, 507, 509, 510, UST	Metals, TOG, TPH-D, TPH-G, VOCs
PH-D, TPH-G, TRPH, VOCs	IR-39	Building 707	Metals, TOG, TPH-D
PH-G, VOCs	IR-52	Railroad Right-of-Way	Metals, PCBs, PEST, TOG, TPH-D, TPH
VOCs	SI-54	Building 511A	Metals, PAHs, PCBs, PEST, TOG, TPH-D
TPH-E, VOCs, TPH-MO, Waste Oil	IR-56	Railroad Tracks and yard south of Crisp Ave.	Metals, PAHs, SVOCs, TOG, VOCs
TPH-G, TPH-P, VOCs	IR-72	Building 810 Area, UST	Metals, SVOCs, TPH, VOCs
PH-P, VOCs	IR-73	Asphalt Batch Plant	SVOCs, TPH, VOCs
H-MO	IR-74, (AOC-74)	Building 815 (formerly used defense site)	TBD
	IR-75, (AOC-75)	Building 820 (formerly used defense site)	TBD
	IR-76, (AOC-76)	Area surrounding Buildings 830 and 831 (formerly used defense site)	TBD
	<u>PARCEL F</u>		
OCs, TPH-MO, TPH-P	IR-78, (AOC-78)	Subtidal Area	Metals, PAHs, PCBs, TPH
PH-D, TPH-G, VOCs			
PH-D, TPH-E, TPH-P,			
D, TPH-E, TPH-P, VOCs			
Waste Oil			
PH-D, TPH-E, TPH-P, VOCs			
	<u>UTILITY SITES**</u>		
	IR-45	Steam Lines	Metals, PAHs, PCBs, PEST, SVOCs, TOG
	IR-46	Fuel Distribution Lines (Tank Farm)	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-P, TRPH, VOCs
	IR-47	Fuel Distribution Lines (Tank S-505)	Metals, PCBs, PEST, TOG, TPH-E, TPH-I
	IR-48	Suspected Steam Lines (Building 503)	Not Found
	IR-49	Fuel Distribution Lines (Buildings 203, 205)	Metals, PAHs, PCBs, PEST, SVOCs, TOG, TRPH, VOCs
	IR-50	Storm Drains and Sanitary Sewers	CN, Metals, PAHs, PCBs, SVOCs, TPH-D, TRPH, VOCs
	IR-51	Former Transformer Locations	PCBs
	<u>EXPLANATION</u>		
	** = Facility-wide sites (Parcels A through E only)		
	AOC = Area of concern		
	IR = Installation Restoration		
	SI = Site inspection		
	CN = Cyanide		
	NA = Not Analyzed		
	ND = Not Detected		
	PAHs = Polycyclic aromatic hydrocarbons		
	PCBs = Polychlorinated biphenyls		
	PEST = Pesticides		
	RAD = Radiation		
	SVOCs = Semivolatile organic compounds		
	TBD = To be determined		
	TOG = Total oil and grease		
	TPH = Total petroleum hydrocarbons		
	TPH-D = Total petroleum hydrocarbons as diesel		
	TPH-E = Total petroleum hydrocarbons as extractable unknown hydrocarbons		
	TPH-G = Total petroleum hydrocarbons as gasoline		
	TPH-MO = Total petroleum hydrocarbons as motor		
	TPH-P = Total petroleum hydrocarbons as purgable unknown hydrocarbons		
	TRPH = Total recoverable petroleum hydrocarbons		
	UST = Underground storage tank		
	VOCs = Volatile organic compounds		

NTS OF CONCERN IDENTIFIED DURING THE IRP

		SITE	AREA DESIGNATION	SOIL	GROUNDWATER
<div>3</div>					
PARCEL E					
	IR-1/21	Industrial Landfill		Metals, PCBs, RAD, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, PCBs, SVOCs, TPH-D, TPH-G, VOCs
	IR-2	Bay Fill		Metals, PCBs, PEST, RAD, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, PCBs, SVOCs, TPH-D, TPH-G, TRPH, VOCs
	IR-3	Oil Reclamation Ponds		Metals, PAHs, PCBs, SVOCs, TOG, TPH-D, TPH-E, TRPH, VOCs	Metals, PCBs, PEST, SVOCs, TPH-D, VOCs
	IR-4	Scrap Yard		Metals, PAHs, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, TOG, TPH-D, TPH-G, VOCs
	IR-5	Old Transformer Storage Yard		Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, PAHs, PCBs, TPH-D, TPH-P, VOCs
	IR-11	Building 521, Power Plant Area		Metals, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-G, VOCs	TPH-D, VOCs
	IR-12	Disposal Trench Area		Metals, CN, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-E, TPH-G, TPH-MO, VOCs	Metals, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs
	IR-13	Old Commissary Area		Metals, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs	SVOCs, TOG, TPH-E
	IR-14	Oil Liquid Waste Disposal Area		Metals, PEST, SVOCs, TOG, TPH-D, TPH-G, TRPH, VOCs	Metals, TOG, TPH-D, TPH-G
	IR-15	Oil Waste Ponds and Incineration Tank		Metals, PEST, SVOCs, TOG, TPH-D, TPH-G, VOCs	Metals, PAHs, PCBs, SVOCs, TOG, TPH-D, TPH-G, VOCs
	IR-36	Buildings 371, 400, 404A, 405, 406, 413, 414, 704, 710, parts of Area IV, UST		Metals, PAHs, PEST, PCBs, SVOCs, TOG, TPH-D, TPH-G, TPH-MO, TPH-P, VOCs	Metals, SVOCs, PEST, TOG, TPH-D, TPH-G, TPH-MO, VOCs
OCs	SI-38	Buildings 506, 507, 509, 510, UST		Metals, TOG, TPH-D, TPH-G, VOCs	TBD
	IR-39	Building 707		Metals, TOG, TPH-D	CN, Metals
	IR-52	Railroad Right-of-Way		Metals, PCBs, PEST, TOG, TPH-D, TPH-G, VOCs	NA
	SI-54	Building 511A		Metals, PAHs, PCBs, PEST, TOG, TPH-D, TPH-G, TRPH	TBD
H-P, VOCs	IR-56	Railroad Tracks and yard south of Crisp Ave.		Metals, PAHs, SVOCs, TOG, VOCs	TBD
	IR-72	Building 810 Area, UST		Metals, SVOCs, TPH, VOCs	SVOCs, TPH, VOCs
	IR-73	Asphalt Batch Plant		SVOCs, TPH, VOCs	SVOCs, TPH, VOCs
	IR-74, (AOC-74)	Building 815 (formerly used defense site)		TBD	TBD
	IR-75, (AOC-75)	Building 820 (formerly used defense site)		TBD	TBD
	IR-76, (AOC-76)	Area surrounding Buildings 830 and 831 (formerly used defense site)		TBD	TBD
PARCEL F					
4-D,	IR-78, (AOC-78)	Subtidal Area		Metals, PAHs, PCBs, TPH	NA
5, TOG,					
UTILITY SITES**					
	IR-45	Steam Lines		Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-G, VOCs	NA
	IR-46	Fuel Distribution Lines (Tank Farm)		Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-D, TPH-E, TPH-P, TRPH, VOCs	TPH-D
	IR-47	Fuel Distribution Lines (Tank S-505)		Metals, PCBs, PEST, TOG, TPH-E, TPH-P, VOCs	TPH-D
	IR-48	Suspected Steam Lines (Building 503)		Not Found	Not Found
	IR-49	Fuel Distribution Lines (Buildings 203, 205)		Metals, PAHs, PCBs, PEST, SVOCs, TOG, TPH-E, TPH-P, TRPH, VOCs	TPH-D
	IR-50	Storm Drains and Sanitary Sewers		CN, Metals, PAHs, PCBs, SVOCs, TPH-D, TPH-E, TPH-G, TRPH, VOCs	Fecal Coliform, Metals, PAHs, TPH-G, VOCs
	IR-51	Former Transformer Locations		PCBs	TBD

EXPLANATION

** = Facility-wide sites (Parcels A through E only)

AOC = Area of concern

IR = Installation Restoration

SI = Site inspection

CN = Cyanide

NA = Not Analyzed

ND = Not Detected

PAHs = Polycyclic aromatic hydrocarbons

PCBs = Polychlorinated biphenyls

PEST = Pesticides

RAD = Radiation

SVOCs = Semivolatile organic compounds

TBD = To be determined

TOG = Total oil and grease

TPH = Total petroleum hydrocarbons

TPH-D = Total petroleum hydrocarbons as diesel

TPH-E = Total petroleum hydrocarbons as extractable unknown hydrocarbons

TPH-G = Total petroleum hydrocarbons as gasoline

TPH-MO = Total petroleum hydrocarbons as motor

TPH-P = Total petroleum hydrocarbons as purgable unknown hydrocarbons

TRPH = Total recoverable petroleum hydrocarbons

UST = Underground storage tank

VOCs = Volatile organic compounds

Groundwater is present in three water-bearing zones: the uppermost A aquifer; the B aquifer; and the bedrock aquifer. The A aquifer consists of saturated fill materials and undifferentiated sand deposits overlying Bay Mud deposits. In excavated areas near the 1935 shoreline, the A aquifer may overlie bedrock directly. The depth to the water table in the A aquifer ranges from 2 to 15 feet (0.6 to 4.6 m) below ground surface (bgs). The B aquifer is separated from the A aquifer by 5 to 60 feet (1.5 to 18 m) of Bay Mud, which acts as a confining layer. The B aquifer consists of saturated undifferentiated sedimentary deposits between the Bay Mud and Franciscan basement rocks. The bedrock aquifer is the saturated upper weathered surface of the Franciscan basement rocks. The bedrock aquifer and A aquifer are in direct hydraulic communication where the A aquifer overlies bedrock. Groundwater flow in all aquifers is generally toward the Bay.

The primary ecological resource at HPS is San Francisco Bay. If not controlled, contaminants from surface water runoff or the A aquifer could potentially reach the Bay.

Risk Assessment and Remediation Standards

The assessment of whether soil and groundwater is contaminated and requires remediation is largely guided by comparing chemical concentrations, obtained through site sampling, to regulatory standards or to site-specific standards developed following established risk assessment procedures. One standard is U.S. EPA's Preliminary Remediation Goals (PRGs), which are risk-based concentrations that are often used as screening criteria to guide cleanup or additional investigation. Another standard is the State of California Maximum Contaminant Levels (MCLs), which guide cleanup of contaminated aquifers with drinking water as a beneficial use. Chemical concentrations may also be compared to background (ambient) concentrations, which are measured in uncontaminated areas of the site.

In accordance with U.S. EPA guidance, the Navy is using a risk-based approach to evaluate the extent of remediation required to mitigate the risk to human health and the environment at HPS. With the collected analytical data, recent toxicological data on the chemicals known to be present, routes and pathways for exposure to the chemicals, and assumptions on a variety of factors (such as the length of exposure and amount of soil ingested or inhaled), the risk to an individual in a population from both carcinogenic and noncarcinogenic constituents can be calculated using standard U.S. EPA-approved techniques. Site remediation continues until the combined risk from carcinogenic constituents is within U.S. EPA's accepted range of between 1 excess cancer in 1,000,000 (10^{-6}) and 1 in 10,000 (10^{-4}), and the combined risk

from noncarcinogenic constituents is below U.S. EPA's guidance levels. This process differs from remediation to reduce each target constituent to a pre-determined level, which would be done if PRGs or water quality standards, for example, were used as the remediation levels. The actual remediation goal in this risk-based approach (10^{-4} , 10^{-5} or 10^{-6} , for example) is determined on a site-by-site basis prior to remediation and is influenced by the expected reuse of each parcel (e.g., residential vs. industrial).

Human health risk assessments (HHRA) were performed for Parcels A, B, C, D, and E. For each parcel, the HHRA addressed both a commercial/industrial reuse scenario and a residential reuse scenario.

Health risks were within acceptable levels in Parcel A for future residential use. In Parcels B, C, D, and E, risks exceeded acceptable levels in some areas and remediation is required. The primary hazards are related to exposure via ingestion of contaminated soils or skin contact with contaminated soils. Chemicals in groundwater do not pose a human health risk because (1) the groundwater is not used for drinking water, irrigation, or any other purpose; and (2) although volatile organic compounds (VOCs) could potentially volatilize and migrate to the surface, the concentrations are not believed to be high enough to pose a human health risk. Discussions with the regulatory agencies are ongoing regarding Parcels C and E. The Navy has not prepared an HHRA for Parcel F, because there is no pathway for human exposure to the submerged contaminated sediments.

Potential risks to ecological receptors at HPS were qualitatively evaluated by the Navy as part of the basewide Phase 1A ecological risk assessment (U.S. Navy, 1994b) and, for Parcel A, by the U.S. EPA in a screening level qualitative ecological risk assessment (QERA) (U.S. EPA, 1994a). In general, the risks to terrestrial ecological receptors are minimal, because most of HPS is covered with asphalt, concrete, or buildings, and there is minimal and poor quality habitat. However, there is the potential for contaminants in groundwater to migrate to the Bay and impact aquatic receptors.

The following is a site-by-site description of the current state of the Navy's remediation effort at HPS. Changes to this effort are governed by the standards and procedures of CERCLA, not NEPA, and thus may occur independently of this EIS or its NEPA Record of Decision.

Parcel A

Existing Contamination

Parcel A consists of about 88 acres (36 ha). Two sites were identified under the Navy's IRP, IR-59 Jerrold Avenue Investigation (JAI) and IR-59 (the groundwater underlying Parcel A). These sites were carried through to the RI phase. The RI at IR-59 JAI was initiated upon the discovery of sandblast grit in soil containing paint chips. This material was analyzed and found to contain pesticides, low levels of semivolatile organic compounds (SVOCs), total petroleum hydrocarbons (TPH) as diesel and motor oil, and metals. The soil and sandblast grit were

excavated until confirmation sampling resulted in concentrations of pesticides below the limit of detection and metals within the range of ambient levels (U.S. Navy, 1995d). The excavation was backfilled with clean fill material.

The Navy collected samples of groundwater (IR-59) from boreholes, open trenches, and six monitoring wells. Two SVOCs were detected at concentrations below U.S. EPA Region 9 PRGs. Arsenic was detected at levels above its PRG but below its U.S. EPA MCL for drinking water. Low concentrations of TPH as motor oil were detected in two small areas of Parcel A. No constituents of concern were detected above health-based levels in any of the groundwater samples (U.S. Navy, 1995e).

Human Health Risk

Based on the results of the HHRA, the Navy, U.S. EPA, DTSC, and RWQCB agreed that soils in Parcel A do not pose a significant threat to human health under both the commercial/industrial and residential exposure scenarios (U.S. Navy, 1995e).

Human exposure to groundwater at Parcel A is highly unlikely. Groundwater yields at Parcel A are too low to constitute a source for drinking water, irrigation, or any other purpose. Therefore, no pathway for exposure to groundwater exists. For this reason, and because CERCLA-regulated substances in groundwater were not detected above PRGs, no HHRA for exposure to groundwater was performed. U.S. EPA, DTSC, and RWQCB concurred that an HHRA for groundwater was unnecessary.

Ecological Risk

Potential risks to ecological receptors from Parcel A were qualitatively evaluated by the U.S. EPA in a QERA (U.S. EPA, 1994a). The QERA concluded that the risk to terrestrial receptors was minimal based on the limited availability of habitat, the scarcity of potential receptors, and the low level of compounds detected. Risk to aquatic receptors is considered to be low because the migration of groundwater occurs at a slow rate. Contaminants would naturally degrade through biodegradation or would attenuate to low levels before reaching aquatic resources.

Proposed Remediation

In accordance with CERCLA, 42 U.S.C. § 113(k)(2)(B)(i-v) and 117(a)(2), the Navy undertook extensive community participation activities to discuss potential remediation alternatives at Parcel A. The Draft RI report for Parcel A was released to the public in June 1995. The Proposed Plan was released in August 1995 and mailed to more than 1,100 people on the HPS mailing list. The 30-day public comment

period on the Proposed Plan was held from August 7, 1995 through September 5, 1995, and a public meeting was held on August 22, 1995.

Based on an evaluation of analytical data, the Navy determined that no remedial action is necessary to ensure the protection of human health and the environment at Parcel A. Parcel A reuse, as identified in the Proposed Reuse Plan, consists of a mix of residential, mixed use, research and development, and open space. U.S. EPA, DTSC, and RWQCB concurred with the Navy's determination (U.S. Navy, 1995d). In November 1995, the Navy and the regulatory agencies signed a CERCLA "no action" ROD for Parcel A.

The groundwater underlying Parcel A does not meet the present and probable municipal supply criteria as defined by the single supply criteria in the San Francisco RWQCB Resolution No. 89-39. Although the low levels of motor oil could impart an unpleasant taste if ingested, they do not pose a human health risk. As a result, the State of California does not intend to require further investigation, remediation, or groundwater monitoring. However, the parcel will be subject to deed notification so that future users of the parcel will be informed that motor oil was detected in the groundwater (U.S. Navy, 1995d).

Parcel B

Existing Contamination

Parcel B consists of about 63 acres (26 ha). Fourteen IR sites have been identified at Parcel B. An RI for Parcel B was conducted from 1991 to 1996 to evaluate the nature and extent of contamination and the related potential human health and ecological risks (U.S. Navy, 1996d). The RI included the collection of 1,850 soil samples and 620 groundwater samples. Based on past use (which included offices and light industrial production), the samples were analyzed for one or a combination of the following: inorganic compounds, pesticides, PCBs, SVOCs, volatile organic compounds (VOCs), petroleum-related compounds, and gross radiation.

The compounds most often detected in soil and groundwater were petroleum-related compounds, primarily TPH as diesel or motor oil, which are not hazardous substances as defined under CERCLA. However, most sites on Parcel B include petroleum compounds that are commingled with CERCLA hazardous substances. At several sites, inorganic compounds were detected at concentrations above ambient concentrations, most significantly at IR-07, referred to as the Sub-Base (i.e., submarine) Area, and IR-18, the Waste Disposal Area. Elevated lead concentrations were detected in two soil samples, and elevated nickel concentrations were detected in soil and groundwater.

Organic compounds were detected in soil and groundwater samples at IR-10, the former battery and electroplating shop: trichloroethylene was detected in both soil and groundwater, and vinyl chloride was detected in one groundwater sample (U.S. Navy, 1996d).

Human Health Risks

The HHRA for Parcel B concluded that, for the commercial/industrial scenario, carcinogenic risk exceeded acceptable levels (U.S. Navy, 1996d), with primary risks attributed to exposure through ingestion of and skin contact with Aroclor-1260, arsenic, polyaromatic hydrocarbons (PAHs), and trichloroethane in contaminated soils, as well as inhalation of trichloroethane. In addition, under the future residential scenario, ingestion of produce grown at the site also contributed to the risks associated with Parcel B. For the residential scenario, both carcinogenic and noncarcinogenic risks exceeded acceptable levels. Therefore, remedial action will be taken, as described below.

Ecological Risk

Approximately 75 percent of Parcel B is developed and covered by manmade structures, such as roads and buildings. With little open space for flora and fauna, Parcel B is considered to have insignificant habitat value, and exposure pathways to terrestrial species are currently incomplete. As a result, Parcel B does not pose a risk to existing terrestrial receptors. However, TPH in soil and groundwater could pose a risk to aquatic receptors in San Francisco Bay. Therefore, TPH in soil and groundwater will be addressed through a CAP.

Interim Removal Actions

Concentrations of hazardous substances (nickel and SVOCs) in groundwater at IR-07 exceed National Ambient Water Quality Criteria (NAWQC) and water quality objectives, which are designed to protect aquatic receptors. Measures such as source removal and post-remedial groundwater monitoring will be implemented (U.S. Navy, 1997f). Potential risks to aquatic receptors posed by petroleum substances, which are not addressed under the Navy's IR program, are being evaluated separately under the Parcel B CAP, administered by the RWQCB (See Section 3.7.4).

Proposed Remediation

The Draft Final RI for Parcel B was released to the public in June 1996 (U.S. Navy, 1996d), and the Draft Final FS report was released in September 1996 (U.S. Navy, 1996e). The Proposed Plan for Parcel B was released to the public on October 16, 1996. The public comment period on the Parcel B Proposed Plan began on October 24, 1996 and was originally scheduled to end on November 25, 1996. At the request

of the community, the 30-day public comment period was extended through December 26, 1996. A public meeting was held on November 13, 1996.

A CERCLA ROD for Parcel B was signed by the Navy and regulatory agencies in October 1997 (U.S. Navy, 1997f). An Explanation of Significant Differences is expected to be signed in the fall of 1998. Parcel B community reuse, as indicated in the Reuse Plan, consists of industrial, mixed use (including residential use), research and development, and open space. Pursuant to the Parcel B CERCLA ROD, the Navy is remediating soil contamination to levels protective of the health of future residents. Groundwater was not determined to require remediation to protect future residents because no contact is expected. To protect aquatic receptors in San Francisco Bay, the TPH contamination in soil and groundwater will be addressed through a CAP.

The Draft Final FS (U.S. Navy, 1996e) identified, screened, and evaluated five alternatives for soil remediation and three alternatives for groundwater remediation. The Navy selected excavation and off-site disposal as the final remedy for contaminated soil at Parcel B. Construction is currently underway. The major components of the selected remedy for soils are as follows:

- Excavation of contaminated soil to a depth required to reach an acceptable risk level under a residential scenario, but not to exceed 10 feet (3 m) bgs.
- Off-site disposal of contaminated soil.
- Placement of clean backfill in excavated areas.
- Deed notification indicating that soil below 10 feet (3 m) bgs in remediated areas may be contaminated. In the future, all soils with residual chemical constituents excavated from below 10 feet (3 m) bgs in remediated areas must be properly managed in accordance with Federal, state, and local laws and requirements, including local ordinances such as Articles 4.1 and 20 of the San Francisco Public Works Code.
- Any future owner and/or tenant of Parcel B who excavates soils containing levels of contaminants in excess of the remediation goals specified in the CERCLA ROD will be restricted from placing the excavated soils onto the ground surface and restricted from mixing the excavated soils with soils meeting the remediation goals.

The major components of the selected remedy for groundwater are as follows:

- Lining storm drains, repairing leaks, and pressure grouting storm drain pipe bedding material in locations where 1) the storm drain system is below the water table and found to be leaking, and 2) where groundwater is contaminated.
- Removing steam and fuel lines.
- Deed restrictions, such as prohibiting all uses of groundwater within the shallow water-bearing zone(s) to 90 feet (27 m) bgs, and notification of storm drain lining.
- Deed notification indicating that contaminants may be present in the groundwater in remediated areas. Surface discharge of contaminated groundwater is prohibited.
- Groundwater monitoring for up to 30 years to evaluate the effectiveness of soil source removal actions and to monitor concentrations of hazardous substances that could migrate toward the Bay.

The Navy will monitor the groundwater to ensure that the NAWQC (as set forth in the Central Valley RWQCB's 1995 Compilation of Water Quality Goals, as adopted by the San Francisco RWQCB) or state water quality objectives (as set forth in the 1995 Water Quality Control Plan for the San Francisco Bay Region) and the ambient concentration of metals, whichever are higher, are not exceeded at the inland edge of the Parcel B tidally influenced zone (approximately 200 to 300 feet [60 to 90 m] from shore), which is the point of compliance. Based on groundwater flow data, monitoring wells will be placed at locations where contaminant migration will be detected five years before it reaches the point of compliance. If contaminants that could adversely affect aquatic receptors are detected, the Navy will work with the RWQCB and U.S. EPA to design and implement a remediation approach to protect water resources.

Petroleum hydrocarbons that are not regulated under CERCLA will be addressed in a CAP for soil and groundwater at Parcel B. The CAP will be administered by the Navy with RWQCB oversight. Regulatory requirements of the CAP are discussed in Section 3.7.2, and technical information is discussed in Section 3.7.4.

Parcel C

Existing Contamination

Parcel C consists of about 72 acres (29 ha). Ten IR sites are located entirely or partially in Parcel C. The primary chemical contaminants detected in soil and groundwater include VOCs, SVOCs, PCBs, TPH as gasoline and diesel, and metals. Identified sources of these chemicals include leaking sumps containing VOCs and SVOCs, leaking fuel (gasoline and diesel) lines and USTs, sandblast material containing lead and other metals, and leaking PCB-containing transformers (U.S. Navy, 1997b). Petroleum hydrocarbon and solvent plumes in groundwater occur in the eastern half and west-central portions of Parcel C.

Floating hydrocarbons are present near some UST and fuel pipeline source areas. Dissolved solvents, primarily trichloroethylene (TCE) and trichloroethylene (perchloroethylene, or PCE), have been detected in groundwater in some areas, but the liquid phase of these dense non-aqueous phase liquids has not been confirmed (U.S. Navy, 1997b). Sites containing areas contaminated only with petroleum hydrocarbons in soil and/or groundwater have been recommended for inclusion in a CAP (see Section 3.7.4).

Human Health Risks

The HHRA performed for Parcel C indicates that there are areas that will require remediation to meet acceptable risk levels for proposed future uses as set forth in the Proposed Reuse Plan. The chemicals comprising most of the carcinogenic risk were arsenic, beryllium, Aroclor-1260, PAHs, and pesticides. Skin contact with and ingestion of these chemicals in soil were the dominant exposure pathway for workers in the industrial scenario, whereas ingestion of home-grown produce was the dominant pathway for future residents. The specific areas within the parcel that will require remediation and the appropriate remedial alternatives to be chosen for these areas will be developed by the Navy and the regulatory agencies in the preparation of the Proposed Plan and CERCLA ROD for the parcel.

Ecological Risks

Most of Parcel C is developed with asphalt, concrete, or buildings. With little open space for flora and fauna, Parcel C has limited area and poor quality existing terrestrial habitat. Potential terrestrial exposure pathways include skin contact with or ingestion of contaminated soil in the unpaved areas, but these pathways do not pose a significant risk because of the lack of ecological receptors at the site under current use. However, TPH in soil and groundwater could pose a risk to aquatic receptors in San Francisco Bay. Therefore, TPH in soil and groundwater will be addressed through a CAP.

Interim Removal Actions

Completed removal actions undertaken at Parcel C include a facility-wide UST program, sandblast grit removal program, exploratory excavations, storm drain sediment removal (also, see discussion under Basewide IR Sites), and sediment removal at Drydock 4.

Proposed Remediation

The Draft Final RI for Parcel C was released to the public in March 1997 (U.S. Navy, 1997d), and the Draft Final FS report was released in July 1998 (U.S. Navy, 1998f). Parcel C community reuse could consist of maritime-industrial, mixed use, research and development, educational/cultural, and open space.

The Draft Final FS (U.S. Navy, 1998f) identified, screened, and evaluated remedial alternatives for Parcel C. A parcel-wide approach was selected because many of the IR sites within Parcel C contain similar hazardous substances. In addition to the no action alternative, four alternatives for soil remediation and four alternatives for groundwater remediation were analyzed, as identified in Tables 3.7-2 and 3.7-3.

**TABLE 3.7-2:
PARCEL C SOIL REMEDIATION ALTERNATIVES
ELEMENTS OF REMEDIATION**

REMEDICATION ACTION	REMEDICATION ALTERNATIVE			
	Alt S-2	Alt S-3	Alt S-4	Alt S-5
Institutional controls: access restrictions	✓	✓	✓	✓
Removal actions	✓	✓	✓	
On-site placement of solidification and stabilization (S/S) treated soil at the IR-01/21 landfill		✓	✓	
Off-site disposal	✓	✓	✓	
On-site S/S of soil vapor extraction (SVE)-treated soil and nonvolatile-affected soil		✓		
In situ SVE of volatile-affected soil		✓		✓
In situ S/S of SVE-treated soil and other affected soil using shallow soil mixing				✓
On-site thermal desorption of volatile-affected soil			✓	
Ex situ S/S		✓	✓	

Note: Alt S-1 = No Action Alternative for soil (not included in table)

Source: U.S. Navy, 1998f.

**TABLE 3.7-3:
PARCEL C GROUNDWATER REMEDIATION ALTERNATIVES
ELEMENTS OF REMEDIATION**

REMEDICATION ACTION	REMEDICATION ALTERNATIVE			
	Alt GW-2	Alt GW-3	Alt GW-4	Alt GW-5
Mitigative measures and groundwater monitoring	✓			
Institutional controls	✓			
Excavation and off-site disposal of saturated affected soils	✓			
Containment (sheet piling)	✓			
Extraction/treatment/discharge to publicly-owned treatment works		✓		
In situ treatment			✓	✓

Note: Alt GW-1= No Action Alternative for groundwater (not shown in table)

Source: U.S. Navy, 1998f.

In accordance with the guidelines in U.S. EPA's May 25, 1995, *Land Use in the CERCLA Remedy Selection Process* directive (U.S. EPA, 1995), the proposed future land uses for Parcel C, as indicated in the Proposed Reuse Plan, will be considered in selecting the final remedy for Parcel C. Future restrictions on parcel use could be similar to those identified for Parcel D (see below). The selected remedy(ies) and use restrictions for Parcel C will be developed with consideration of public concerns and comments, as required under CERCLA, 42 U.S.C. § 113(k)(2)(B)(i-v) and 117(a)(2). Final approval for the CERCLA ROD for Parcel C is anticipated in January 1999.

Petroleum hydrocarbons that are not regulated under CERCLA will be addressed in a CAP for soil and groundwater at Parcel C. The CAP will be administered by the Navy with RWQCB oversight. Regulatory requirements of the CAP are discussed in Section 3.7.2, and technical information is discussed in Section 3.7.4.

Parcel D

Existing Contamination

Parcel D consists of about 103 acres (41 ha). Twenty-two IR sites are located entirely or partially in Parcel D. An RI for Parcel D was conducted from 1991 to 1996 to evaluate the nature and extent of contamination and the related potential human health and ecological risks. Over the course of the RI, the Navy collected extensive soil, groundwater, and utility line data. Based on past use (shipping and ship repair, office and commercial space, light industrial production), samples were analyzed for a combination of the following: metals, pesticides and PCBs, SVOCs, VOCs, petroleum-related compounds, and gross radiation.

Petroleum-related compounds, primarily TPH as diesel or motor oil, were detected in soil and groundwater. Inorganic compounds (metals) were detected in soil and groundwater at several sites at concentrations above ambient concentrations. Elevated concentrations of lead in soil were detected in several areas, with the highest concentrations at IR-33 North. Arsenic and beryllium were detected throughout Parcel D in both soil and groundwater. Other metals found in serpentinite-derived fill materials, such as chromium, nickel, and manganese, were also detected throughout Parcel D in soil and groundwater. Chromium VI was detected in groundwater below IR-09, the former pickling and plating yard. Cesium and associated elements strontium and europium were detected in the secondary containment vault behind Buildings 364 and 365.

The most commonly detected organic compounds in the Parcel D soils were PCBs, PAHs, and petroleum-related compounds. PCBs in soils were found throughout the parcel, with maximum concentrations found in soils at IR-08 and storm drain sediments at IR-50. PAHs were detected in soils throughout Parcel D, with maximum concentrations in soils at IR-53 and storm drain sediments at IR-50 (U.S. Navy, 1996f).

Human Health Risks

The HHRA performed for Parcel D indicates that there are areas that will require remediation to meet acceptable risk levels for proposed future uses as set forth in the Proposed Reuse Plan (U.S. Navy, 1996f). The chemicals contributing most to the carcinogenic risk for future workers were Aroclor-1248, Aroclor-1260, arsenic, beryllium, chromium VI, and PAHs through skin contact and exposure to soil. Ingestion of home-grown produce containing arsenic, beryllium, Aroclor-1254, Aroclor-1260, PAHs, pesticides, and n-nitroso-di-n-propylamine are the main contributors to the risk to future residents. The specific areas within the parcel that will require remediation and the appropriate remedial alternatives to be chosen for these areas will be developed by the Navy and the regulatory agencies in the preparation of the CERCLA ROD for the parcel.

Ecological Risks

Most of Parcel D is developed with asphalt, concrete, or buildings. With little open space for flora and fauna, Parcel D has limited area and poor quality existing terrestrial habitat. Potential terrestrial exposure pathways include skin contact with and ingestion of contaminated soil in the unpaved areas, but these pathways do not pose a significant risk because of the lack of ecological receptors at the site under current use.

Concentrations of hazardous substances in groundwater exceed NAWQC and Basin Plan water quality objectives. However,

groundwater flow is relatively slow, and contaminants are expected to attenuate or naturally degrade before reaching the point of compliance (the inland edge of the tidally influenced zone, which is approximately 200 to 300 feet [60 to 90 m] from shore). Groundwater monitoring wells will be placed between the point of compliance and the contaminant plume to detect contamination five years before it could impact aquatic receptors. If contamination is detected, the Navy will work with the RWQCB and U.S. EPA to design and implement a remediation approach to protect water resources. The groundwater monitoring program will be developed as part of the remedial design. Potential risks to aquatic receptors posed by petroleum substances are being evaluated separately under a CAP.

Interim Removal Actions

The Navy has undertaken several removal actions at IR sites in Parcel D. Completed removal actions include facility-wide UST and AST removals, sandblast grit removal, PCB spill area removal action (IR-08), pickling and plating yard removal action (IR-09), exploratory excavation removal action, and storm drain sediment removal action (contaminated sediments from the storm drain systems have also been removed at Parcels A, B, C, and E). Cesium that had been spilled onto the asphalt behind Building 364 was also removed.

Proposed Remediation

The Draft Final RI for Parcel D was released in October 1996, and the Draft Final FS was submitted to regulatory agencies in January 1997. Parcel D community reuse, as indicated in the Proposed Reuse Plan, could consist of maritime-industrial, mixed use, research and development, educational/cultural, industrial, and open space.

The Draft Final FS (U.S. Navy, 1997a) identified, screened, and evaluated remedial alternatives for Parcel D. In addition to the no action alternative, four alternatives for soil remediation and two contingency alternatives for groundwater remediation were analyzed. The four alternatives for soil remediation are identified in Table 3.7-4.

TABLE 3.7-4:
PARCEL D SOIL REMEDIATION ALTERNATIVES
ELEMENTS OF REMEDIATION

REMEDICATION ACTION	REMEDICATION ALTERNATIVE			
	Alt S-2	Alt S-3	Alt S-4	Alt S-5
Excavation	✓		✓	
Off-site disposal	✓			
Backfill	✓	✓	✓	
Mitigative measures	✓	✓	✓	✓
Groundwater monitoring	✓	✓	✓	✓
In situ SVE of volatile-affected soil		✓		✓
Excavation of SVE-treated soil and nonvolatile-affected soil		✓		
On-site S/S of SVE-treated soil and nonvolatile-affected soil		✓		
On-site placement of S/S treated soil at the IR-01/21 landfill		✓	✓	
On-site thermal desorption of volatile-affected soil			✓	
In situ S/S of thermal desorption-treated soil and other excavated soil			✓	
In situ S/S of SVE-treated soil and all other affected soil using shallow soil mixing				✓
Deed restrictions				✓

Source: U.S. Navy, 1997a.

Notes:

Alternatives combine remedial options for both soil remediation and groundwater monitoring.

Alt S-1 = No Action Alternative for soil and groundwater (not listed in table)

All four soil remediation alternatives include mitigative measures and groundwater monitoring. Two contingency alternatives for groundwater remediation are proposed should groundwater monitoring at the point of compliance (tidal influence zone) document an increase of target contaminants above pre-determined target levels. The contingency alternatives include groundwater containment using a slurry wall, along with groundwater extraction, treatment, and discharge to the sanitary sewer (Alternative GW-2) and extraction, treatment, and discharge to a sanitary sewer (without a slurry wall) (Alternative GW-3).

The Navy has tentatively selected Alternative S-2, excavation and off-site disposal of contaminated soil and deed notifications and restrictions, as the final remediation remedy (U.S. Navy, 1997h). Contaminated soil would be excavated to a depth to reach the target risk level for the appropriate reuse scenario, with the maximum depth to be determined in consultation with the regulatory agencies.

Proposed deed restrictions on Parcel D include the following:

- Prohibition of all uses of groundwater within the shallow water-bearing zone(s) to 200 feet (61 m) bgs and notification of lining of storm drains.
- Notification that contamination may be present in the groundwater in remediated areas, and surface discharges of contaminated groundwater are prohibited.
- Notification indicating that soil in remediated areas may be contaminated below the maximum remediation depth. In the future, all soils in remediated areas with residual chemical constituents excavated from below the maximum remediation depth must be properly managed in accordance with Federal, state, and local laws and requirements, including local ordinances such as Articles 4.1 and 20 of the San Francisco Public Works Code.

Groundwater monitoring for up to 30 years would be conducted to evaluate the effectiveness of the soil source removal actions and to monitor concentrations of hazardous substances that could migrate toward the Bay. The selected remedy is currently being determined. A CERCLA ROD for Parcel D is being prepared and is expected to be signed in late 1998.

Petroleum hydrocarbons that are not regulated under CERCLA will be addressed in a CAP for soil and groundwater at Parcel D. The CAP will be administered by the Navy with RWQCB oversight. Regulatory requirements of the CAP are discussed in Section 3.7.2, and technical information is discussed in Section 3.7.4.

Parcel E

Existing Contamination

Parcel E consists of about 167 acres (68 ha). Twenty-two IR sites are located entirely or partially in Parcel E. The primary types of chemical contaminants detected in soil and groundwater in Parcel E include VOCs, SVOCs, TPHs, PCBs, and metals. Radium in the radioluminescent dial of one instrument was found in Building 509. Numerous radioluminescent instrument dials are scattered at the surface in IR-02 (Bayfill Site). A concrete pad adjacent to Building 707 is contaminated with cesium and associated elements cobalt and europium. Identified sources of contamination include debris zones in the former industrial landfill (IR 01/21), former oil reclamation ponds (IR-03), leaking USTs and ASTs, surface waste disposal sites, sandblast waste, and scrap yards (U.S. Navy, 1997g).

Petroleum hydrocarbons and low-level solvent plumes in groundwater are located throughout Parcel E (for example, beneath

the former industrial landfill and surface waste disposal areas). Floating hydrocarbons were detected at the former oil reclamation ponds and aboveground waste oil tanks. Interim removal actions will address immediate soil and groundwater contamination at IR-01/21 (former landfill) and IR-03 (former oil reclamation ponds). Sites containing areas contaminated only with petroleum hydrocarbons in soil or groundwater at concentrations exceeding screening criteria are recommended for further evaluation under the CAP for Parcel E (U.S. Navy, 1997g).

Human Health Risks

The HHRA performed for Parcel E indicates that there are areas that will require remediation to meet acceptable risk levels for proposed future uses (U.S. Navy, 1997g). Exposure to VOCs, SVOCs, pesticides, PCBs, petroleum hydrocarbons, and radium contribute to the risk for workers through ingestion and inhalation of soils, and to the risk for future residents by ingestion of home-grown produce. The specific areas within the parcel that will require remediation and the appropriate remedial alternatives to be chosen for these areas will be developed by the Navy and the regulatory agencies in the preparation of the Proposed Plan and CERCLA ROD for the parcel.

Ecological Risks

Potential risks to ecological receptors in Parcel E were qualitatively evaluated by the Navy as part of the basewide Phase 1A ecological risk assessment (U.S. Navy, 1994b). This was followed by the Phase 1B risk assessment (U.S. Navy, 1996g), which concluded that there were potential risks to terrestrial receptors. Based on these results and the habitat present, a terrestrial ecological risk assessment was performed as part of the Draft Final Parcel E RI Report (U.S. Navy, 1997g). The Navy is currently conducting an ecological risk assessment for Parcel E that includes collecting samples of plant and animal tissue. The results of this study will be used to develop ecological cleanup criteria, which will be contained in the Draft Final Parcel E FS, projected to be prepared in the second quarter of 1999.

Interim Removal Actions

Completed removal and remediation actions at Parcel E include the sandblast waste removal and fixation program at IR-02 Northwest, removal of AST S-505 in IR-02 Southeast, removal of floating product at the oil ponds in IR-03, contaminated soil removal at the exploratory excavation site EE-18 in IR-11/14/15, removal of seven USTs in IR-36 West, in-place closures of two USTs in IR-72, storm drain sediment removal actions, and PCB transformer removal activities. Ongoing activities include groundwater containment at IR-01/02 and IR-03 with sheet pile walls.

Proposed Remediation

The Draft Final RI for Parcel E was released to the public in October 1997, and the Draft FS was submitted to the regulatory agencies in January 1998. Parcel E community reuse could include open space, mixed use, maritime-industrial, industrial, and research and development.

The Draft FS identified remedial alternatives for cleanup of soil and groundwater (U.S. Navy, 1998a). In conjunction with the remedial alternatives, the Navy proposes to take mitigative measures to prevent migration of contaminants along preferred pathways. These mitigative measures would be implemented in combination with the remedial alternatives to meet soil remediation action objectives. In addition to a no action alternative, seven parcel-wide remedial alternatives for soil remediation and groundwater monitoring have been identified (Table 3.7-5). All seven alternatives include removal of radium dials at IR-02 that can be detected at the surface (down to 18 to 20 inches [46 to 51 cm]), multi-layer capping of IR-01/21 and IR-02 Northwest debris zones, and deed restrictions.

In addition to the issues discussed above, the Navy proposes to remove a radium dial at Building 509, a cesium-contaminated portion of a concrete pad adjacent to Building 707, and a cesium-contaminated portion of a concrete vault behind Buildings 364 and 365 (Parcel D).

The final remedy for Parcel E has not yet been selected. In accordance with the guidelines in U.S. EPA's May 25, 1995, *Land Use in the CERCLA Remedy Selection Process* directive (U.S. EPA, 1995), the proposed future land uses for Parcel E as indicated in the Proposed Reuse Plan will be considered in selecting the final remedy for Parcel E. Future restrictions on use of this parcel could be similar to those identified for Parcel D. The selected remedies and use restrictions for Parcel E will be developed with consideration of public concerns and comments, as required under CERCLA, 42 U.S.C. § 113(k)(2)(B)(i-v) and 117(a)(2). Final CERCLA ROD approval for Parcel E is anticipated in December 1999.

Petroleum hydrocarbons that are not regulated under CERCLA will be addressed in a CAP for soil and groundwater at Parcel E. The CAP will be administered by the Navy with RWQCB oversight. Regulatory requirements of the CAP are discussed in Section 3.7.2, and technical information is discussed in Section 3.7.4.

**TABLE 3.7-5:
PARCEL E SOIL REMEDIATION ALTERNATIVES
ELEMENTS OF REMEDIATION**

REMEDICATION ACTION	REMEDICATION ALTERNATIVE						
	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7	Alt 8
Multilayer capping of IR-01/21 and IR-02 Northwest debris zones	✓	✓	✓	✓	✓	✓	✓
Soil-layer capping of the remainder of Parcel E (IR-03 and Parcel E miscellaneous soils remedial units) with clay, asphalt, or concrete	✓						
Installing a sheetpile wall and slurry wall along the Parcel E boundary	✓						
Consolidating contaminated IR-03 soil at former oil reclamation ponds, installing a sheetpile wall around and single-layer capping of the former oil reclamation ponds area, and DPE and off-site recycling of LNAPLs		✓					
Excavating and using Parcel E miscellaneous soils as foundation of layer for the cap at IR-01/21 and IR-02 Northwest debris zones		✓	✓			✓	
Installing a sheetpile wall with an interceptor trench along shoreline		✓	✓	✓	✓		
Excavating contaminated IR-03 soil, disposing of visibly contaminated soil off site, using remaining soil as foundation layer for cap at IR-01/21 and IR-02 Northwest debris zones, and skimming and off-site recycling of LNAPLs			✓			✓	
Excavating contaminated IR-03 soil and Parcel E miscellaneous soils, thermal desorption (TD) treatment of organic-contaminated soil, S/S and TD treatment of inorganic-contaminated soil				✓			
Placing treated soil at IR-01/21 and IR-02 and skimming and off-site recycling of LNAPLs				✓			
Excavating contaminated IR-03 soil, off-site disposal, and skimming and off-site recycling of LNAPLs					✓	✓	✓
Excavating Parcel E miscellaneous soils and off-site disposal					✓		✓
Natural attenuation, encapsulation of IR-01/21 and IR-02 Northwest debris zones, excavation of saturated soil in individual groundwater areas of concern (AOC), off-site disposal of saturated soil, dewatering of groundwater AOC excavations, pretreatment of AOC groundwater, discharge of groundwater to POTW, and groundwater monitoring						✓	✓
Deed restrictions	✓	✓	✓	✓	✓	✓	✓

Source: U.S. Navy, 1998a.

Notes:

Alternatives combine remedial options for both soil remediation and groundwater monitoring.

Alt 1 = No Action Alternative for soil and groundwater (not listed in table).

DPE = Dual Phase Extraction

LNAPL = Light Non-Aqueous Phase Liquid

POTW = Publicly Owned Treatment Works

Parcel F

Existing Contamination

Parcel F consists of about 443 acres (180 ha) of submerged lands under San Francisco Bay. The entire parcel is considered IR-78. Offshore sediments at HPS contain trace metals, SVOCs, PAHs, organochlorine pesticides, PCBs, organotins, and tributyltin. Potential sources of contamination include the industrial landfill, storm drain outfalls, other shoreline IR sites, and non-Navy sites adjacent to the Bay.

Human Health Risks

The Navy has not prepared an HHRA for Parcel F, because there is no pathway for human exposure to the submerged contaminated sediments.

Ecological Risks

The Navy conducted a Phase 1A qualitative assessment of potential ecological receptors that could be impacted as a result of Navy operations. The assessment included a literature and data search combined with a site walk of the HPS facility. Data collected by the Phase 1A survey was used to design a Phase 1B ecological risk assessment for Parcel F to characterize the potential risk to ecological receptors from offshore sediment contamination (U.S. Navy, 1996g). The data indicate that ecological receptors could be exposed to chemicals of concern in sediment and pore water through several exposure pathways, depending on the habitat type and potential receptor considered.

Parcel F comprises three basic habitat types: aquatic, intertidal mudflat, and wetland. Potential receptors include benthic (ocean or Bay floor) invertebrates, fish, birds, and marine mammals. The primary exposure pathway for benthic invertebrates is long-term contact with sediments and pore water and absorption of dissolved chemicals. The primary exposure pathway for fish is ingestion of contaminated prey and incidental ingestion of sediment. The primary exposure pathway for birds, including shorebirds, waterfowl, and terrestrial birds that prey on shorebirds, is ingestion of contaminated prey.

Based on sediment and pore water data, ecological receptors are subject to potentially significant risks. Portions of Parcel F are characterized by concentrations of chemicals that are generally toxic to aquatic life, such as copper, lead, mercury, and tributyltin. Other portions of Parcel F are characterized by concentrations of metals, PCBs, and dichlorodiphenyltrichloroethane (DDT) that are elevated over ambient levels for San Francisco Bay sediments. Some of these chemicals, such as DDT, PCBs, and mercury, have high

bioaccumulation factors, which means that they accumulate and are magnified in the natural food chain. Elsewhere in Parcel F, concentrations are only slightly elevated over ambient levels. Ecological receptors in these areas are therefore unlikely to be exposed to greater risk than is present on average throughout the Bay.

In general, benthic invertebrates, benthic fish, shorebirds, and waterfowl are exposed to the potential risk. Pelagic (open sea) fish, marine mammals, and pelagic birds, such as the brown pelican and raptors, may also be susceptible to bioaccumulation. These receptors, however, have relatively large ranges that reduce their risk of exposure to Parcel F contaminants, because they obtain food over a larger area than HPS.

Proposed Remediation

The Navy has developed remedial alternatives for cleanup at Parcel F (U.S. Navy, 1998d). In conjunction with these remedial alternatives, the Navy has taken or proposes future on-shore source control measures for potential sources of contamination to Bay sediments within Parcel F. The source control measures have been conducted, or are proposed for implementation, in combination with the remedial alternatives in other parcels. These measures include the completed facility-wide storm drain sediment removal program, completed sandblast grit removal project, completed facility-wide exploratory excavation removal actions, proposed storm drain relining program (to address leaking sections), proposed shoreline rehabilitation efforts at Parcel E, and proposed sheetpile wall remedial measures along the Parcel E shoreline.

In addition to a no action alternative, four parcel-wide remedial alternatives for Parcel F are summarized in Table 3.7-6. Three of the four alternative remedies include dredging and placement of contaminated sediments that exceed remedial action objectives in a near-shore confined disposal facility, while the fourth proposes dredging and placement of contaminated sediments in a dewatering facility, followed by off-site disposal.

The final remedy at Parcel F has not yet been selected. In accordance with the guidelines in U.S. EPA's May 25, 1995, *Land Use in the CERCLA Remedy Selection Process* directive (U.S. EPA, 1995), the proposed future land uses for Parcel F as indicated in the Proposed Reuse Plan will be considered in selecting the final remedy for Parcel F. The selected remedies and use restrictions for Parcel F will be developed with consideration of public concerns and comments, as required under CERCLA, 42 U.S.C. § 113(k)(2)(B)(i-v) and 117(a)(2). Final CERCLA ROD approval for Parcel F is anticipated in March 1999.

**TABLE 3.7-6:
PARCEL F SOIL REMEDIATION ALTERNATIVES
ELEMENTS OF REMEDIATION**

REMEDICATION ACTION	REMEDICATION ALTERNATIVE			
	Alt 2	Alt 3	Alt 4	Alt 5
Dredging and placement of contaminated sediments exceeding remedial action objectives in a constructed near-shore confined disposal facility	✓	✓		✓
On-site placement of dredged sediments for use in a constructed wetland	✓			✓
Capping in-place contaminated sediments	✓			
Dredging and placement of contaminated sediments in a dewatering facility			✓	
Off-site disposal at a permitted landfill			✓	
Capping in-place contaminated sediments using an armored cap				✓
Source control measures			✓	
Source control measures and monitoring	✓	✓		✓

Source: U.S. Navy, 1998d.

Notes: Alt 1 = No Action Alternative (not listed in table).

Basewide IR Sites

As part of the RI/FS process for HPS, basewide utilities were investigated for potential contaminants. The utilities investigated consisted of storm drains and sanitary sewers (IR-50), steam lines (IR-45), and former PCB-containing transformer sites (IR-51). Areas where contamination was confirmed in the steam lines and former PCB-containing transformer sites are included as part of the proposed remedial actions for each parcel. In IR-50, only portions of storm drains containing contaminated sediments were found to pose a potential risk of possible migration of contaminated sediment to San Francisco Bay. To address this potential risk, the Navy conducted a removal action for contaminated sediments. This project was completed in 1997. The storm drain lines and associated catch basins and manholes were cleaned in Parcels B, C, D, and E. Concurrent with the storm drain line cleaning, associated catch basins and manholes were inspected for sediments and liquids and were cleaned. The sediments were removed from the system and disposed of off site. An evaluation of sections that could still allow migration of contaminated groundwater will be made in each parcel. If sections show possible infiltration of contaminated groundwater, the storm drain lines will be rehabilitated (i.e., relined and associated backfill grouted) to stop possible leakage and migration to the Bay (U.S. Navy, 1998c).

**3.7.4 Basewide
Environmental
Compliance
Programs**

Other Navy remediation efforts at HPS include PCBs, ACM, LBP, storage tanks (USTs and ASTs), and radiation. These efforts were implemented on a facility-wide basis, rather than a parcel-specific basis, because the potential contamination issues are not parcel-specific.

Polychlorinated Biphenyls

PCBs are a class of synthetic organic chemicals with a number of desirable properties for industrial applications, including thermal stability, flame retardance, and low vapor pressure. PCBs have been used as a dielectric fluid in electrical equipment (such as utility transformers and capacitors), in hydraulic fluid and heat transfer fluid, in gaskets, as additives in cutting oils and lubricant, and in a variety of other ways.

A total of 199 transformers, including 99 that contained PCB-containing fluid, were removed between 1974 (the shutdown of Navy shipyard operations) and 1986 (the cessation of Triple A operations). Under the IRP, 78 transformer locations with greater than 50 ppm PCBs were surveyed and evaluated for leakage and contamination. In addition, 118 sites of transformers that had been removed before 1988 were visually evaluated for staining by leaking oils containing PCBs. Additional work was proposed to address equipment with PCB concentrations in the 5 to 50 ppm range.

There are 1 piece of PCB equipment, 2 pieces of PCB-contaminated equipment, and 11 pieces of non-PCB equipment with concentrations greater than 5 ppm that are considered to be in active use (U.S. Navy, 1998e). All other equipment is out-of-service/abandoned or scheduled to be removed and disposed of by the Navy later in 1998.

PCBs were also detected in soils in Parcels B, C, D, E and F, and remediation will be addressed through the IRP for each parcel.

Asbestos

The term asbestos refers to a group of fibrous, naturally occurring minerals that are resistant to heat and chemical breakdown and have high tensile strength. These minerals are not considered dangerous in their natural state but may be hazardous if they become airborne and inhaled. ACM is defined by U.S. EPA as a material containing greater than one percent asbestos.

DOD policy states that all property containing ACM will be conveyed, leased, or otherwise disposed of as-is through the Base Realignment and Closure (BRAC) process unless ACM is determined to pose a threat to human health at the time of transfer. ACM is generally considered to be potentially hazardous when it is damaged or friable

(a state in which the material can be crushed, pulverized, or crumbled by hand pressure when dry) and accessible. Prior to property disposal, available information on the existence, extent, and condition of ACM will be incorporated into an EBS or other appropriate documents, to be provided to the transferee. Asbestos issues at HPS have been addressed in two programs: the IRP, which investigates potential contamination from various chemicals, and the Compliance Program, which ensures the Navy's compliance with applicable regulations.

Asbestos may be present in soils due to contamination from ACM debris or occur naturally as a rock-forming mineral. Shallow (less than 5 feet [1.5 m]) soil samples were collected in 2 study areas where ACM debris was observed (EMCON, 1987). Study Area A was generally within Parcels D and E, and Study Area B was within Parcels A and B and the southeast portion of Parcel D. ACM in the form of thermal system insulation (TSI), transite shingles, tank insulation, and general debris was identified in areas of building demolition, scrap metal processing, and waste landfilling (the industrial landfill in Parcel E [IR-01/21]). Some of the soil samples in Study Areas A and B contained greater than one percent asbestos. The asbestos in most of these samples was described as naturally occurring, attributed to serpentinite bedrock fill that was placed throughout HPS for site grading.

As part of the IRP, additional samples were collected during the first 22 soil investigations. These data confirmed the presence of naturally occurring asbestos site-wide.

The Navy conducted an asbestos survey of 68 buildings and 7 other structures in Parcel A and Drydock 4 between May and July 1993. ACM was identified in 74 of the 75 buildings and structures inspected. An additional 145 buildings in Parcels B through E were inspected by the Navy between August and October 1993. All but six buildings were found to contain confirmed or assumed ACM (ECC, 1995).

Between 1995 and 1997, the Navy abated loose or damaged TSI and asbestos debris in 82 buildings. Abatement of hazardous ACM in buildings within Parcels A through F is complete (U.S. Navy, 1998e).

Lead-Based Paint

DOD policy regarding LBP in residential areas is to manage it in a manner protective of human health and the environment and to comply with all applicable laws and regulations. In August 1993 and November 1997, the Navy conducted an LBP and soil survey at Parcel A. Based upon human health risk assessments, detected lead

concentrations were determined to be within the range of acceptable concentrations for lead in soil (U.S. Navy, 1993b and 1997b).

The Navy conducted LBP surveys of existing residential units only. Since all residential units are located in Parcel A, no surveys for LBP or LBP-derived soil contamination have been conducted in the other parcels.

Storage Tanks

Underground Storage Tanks

USTs at HPS were investigated and removed in two phases. During Phase I, 23 USTs were either removed or closed in place (U.S. Navy, 1990). During Phase II, 22 USTs were removed (U.S. Navy, 1994d). One unconfirmed UST remains at HPS. Its exact location is not known, but historical data suggest that it may be located between IR-75 and IR-76 (in Parcel E) on a privately owned site. This potential tank was identified based on review of Sanborne insurance maps and is documented in the Draft Final RI for Parcel E (U.S. Navy, 1997g). Investigations recommended for this potential UST include geophysical exploration to confirm its location, followed by installing monitoring wells and soil borings to evaluate whether contamination is present. These activities are expected to be completed by early 1999.

Three hazardous waste dipping tanks used in the former electroplating shop outside Building 411 were removed in 1996. Two additional USTs in the vicinity of Building 439 will be closed in place as part of the remedial action for Parcel D. No contamination was detected in the vicinity of these tanks (Sickles, 1998d).

Most of the USTs at HPS contained petroleum products, waste oils, or solvents that would be considered hazardous substances under U.S. EPA or state hazardous substances regulations (U.S. Navy, 1998e). During all removals or closures in place, the RWQCB, which has authority to regulate USTs, delegated their authority to the San Francisco DPH. DPH representatives and DTSC were present and witnessed all tank removal activities. Documentation of these activities was submitted to the DPH.

Because all of the tanks leaked and require remediation, the jurisdiction for the UST investigation transferred to the RWQCB. All non-CERCLA petroleum hydrocarbon contamination associated with the USTs (as well as other non-CERCLA contamination) will be remediated under the HPS CAPs. At the conclusion of the IRP and remediation, the RWQCB will be responsible for certifying the cleanup and issuing "no further action" (site closure) documentation.

Aboveground Storage Tanks

Numerous ASTs have been removed at HPS under the IRP. Some of the tanks had obvious signs of leakage or presented an imminent threat of leakage. These tanks contained petroleum products or water, except for two ASTs that contained solvents. Associated contaminated soil was excavated and disposed of off site. IR-06, the former tank farm, was graded and a liner installed as a temporary cap (U.S. Navy, 1998e).

In June 1997, eight AST locations (Buildings 203, 211, 258, 302, 521, 405, and 809, and the South Pier) were inspected. There are 46 tanks at these sites, scheduled for removal in 1998. Most of the tanks are empty; others contain petroleum hydrocarbons or water (U.S. Navy, 1998e).

Petroleum Hydrocarbons

The Navy plans to prepare CAPs for TPH in soil and groundwater at four parcels: B, C, D, and E. The fifth on-shore parcel, Parcel A, does not have a proposed CAP based on the RWQCB's evaluation that the level of petroleum hydrocarbons encountered did not require a CAP. The purpose of the CAPs will be to identify and evaluate remedial alternatives for soil, groundwater, and surface water containing TPH to mitigate effects from the contamination in each of the parcels.

The Parcel B CAP will evaluate TPH contamination through a variety of analyses of TPH-contaminated soil and groundwater to derive facility-wide TPH remediation levels protective of San Francisco Bay aquatic life. Until these remediation levels have been developed, the Navy is using conservative remediation levels developed in consultation with RWQCB. The TPH constituents that present a risk to human health are benzene, toluene, ethylbenzene, and xylenes. These risk components were evaluated in the HHRA for each parcel and found to pose no human health risk. However, ecological receptors tend to be sensitive to TPH as a whole. Remediation levels for protection of aquatic life will be developed for TPH as gasoline, diesel, and motor oil during the preparation of the first CAP for Parcel B. These cleanup levels will be used in the CAPs for Parcels C, D, and E.

The Navy's remediation of TPH will be integrated with the remediation of CERCLA-regulated chemicals in each parcel.

Radiation

As part of the IR, radiation investigations at HPS were performed in three phases. Phase I consisted of a surface confirmation radiation survey that included air and soil sampling. Phase II focused on the subsurface distribution of radioactive point sources detected in the top 1 foot (0.3 m) of soil during Phase I. The Phase III radiological

investigation was implemented to address concerns regarding the former use, storage, and disposal of radioactive material associated with past U.S. Naval Radiological Defense Laboratory (NRDL) operations at HPS.

During Phase I, elevated gamma activity was detected on the surface in areas within Parcels B, D, and E. Elevated gamma count rates at the surface in Parcel B were isolated to a fill slope associated with road construction on-base; soil samples indicated the source of the elevated gamma count to be radium-226 (Ra-226) and its decay products. Based on the surface survey results, the Navy recommended characterizing the soil down to 1 foot (0.3 m) bgs for radiological constituents.

The Phase II investigation included a subsurface radiation survey of several areas within Parcels B and E. This phase of the investigation was intended to evaluate source material and the lateral and vertical extent of the elevated gamma count rates observed during Phase I. The Navy, in coordination with the U.S. EPA, found that Ra-226 was a naturally occurring radioactive material bound within the mineralogy of the granitic fill material and recommended no further action in Parcel B (U.S. Navy, 1998e).

The purpose of the Phase III radiation investigation was to address the former use, storage, and disposal of radioactive material associated with past NRDL operations at HPS, with the intent of eventually releasing all remaining buildings and sites for unrestricted use. Nine buildings, a concrete drum storage pad, and the low-level radioactive waste storage tank vault were investigated. Surface soil sampling and gamma ray count rate measurements were conducted at the buildings and the drum storage pad; swipe sampling was performed at the low-level radioactive waste storage tank vault. Most of the sites have been recommended for release for unrestricted use by the Navy Radiological Affairs Support Office. Further investigation and/or remediation is required at four sites:

- Cesium-contaminated concrete in the vault behind Buildings 364 and 365 (Parcel D).
- Cesium-containing concrete adjacent to Building 707 (Parcel E).
- Radium-containing instrument dial in Building 509 (Parcel E).
- Radium-containing instrument dials scattered at the surface in IR-02 (Parcel E).

**3.7.5 Standard Navy
Operating
Procedures
During
Remediation*****Soil and Groundwater Remediation Practices***

Prior to the start of remedial activities at each parcel, the Navy prepares a set of remedial action documents for the project. The preparation of these documents requires the Navy to carefully plan the project so that the goal of the remedy (remediation) will be met without adverse environmental or health and safety consequences. The remedial action documents are reviewed by U.S. EPA, DTSC, RWQCB, and the DPH, and the remedial activity is conducted with their oversight. The Navy notifies U.S. EPA in advance that it plans to implement the remedial action.

There are four primary components of the remedial action documents: Remedial Action Work Plan; Site Health & Safety Plan (HASP); Sampling and Analysis Plan (SAP); and Quality Assurance Project Plan (QAPP). Each of these is described briefly below.

Remedial Action Work Plan

The Remedial Action Work Plan presents the technical approach to complete the remedial activity at the site. It defines the existing conditions at the site, including soil and groundwater contamination and potentially affected neighboring sites; goals and objectives of the project, including remediation and the reduction of risk at the site; data gaps, if any, and how they will be filled; the methodology intended to achieve the final remedy; and engineering controls used to control the project and minimize the threat to human health and the environment.

Health and Safety Plan

The purpose of the HASP is to provide necessary information and establish guidelines to enable field personnel to work safely during the proposed fieldwork. Implementation of the HASP also indirectly helps to minimize the potential risk to personnel at neighboring sites and prevent further impacts to soil, water, and air resources.

Activities performed in accordance with the HASP comply with the *Safety and Health Requirements* as set forth in the U.S. Army Corps of Engineers Manual 385-1-1 (U.S. Army Corps of Engineers, 1996) and the requirements of OSHA regulations. The major subjects of the HASP include background information and site conditions, identification of personnel and their responsibilities, list and analysis of potential hazards associated with the work, procedures for air monitoring, procedures for decontamination, general work rules, emergency procedures, and training/medical monitoring requirements for site personnel.

Sampling and Analysis Plan

The SAP describes the field activities, sample collection methods, and procedures to be followed during the sampling phase of the remedial action. Environmental sampling during a remedial action is normally restricted to filling data gaps, if identified. Confirmation sampling is performed to document that contaminant concentrations and associated risk are at or below the target levels. The goal of the SAP is to produce accurate and defensible analytical data. The SAP identifies the number of environmental and quality assurance/quality control (QA/QC) samples to be collected, methodologies to be used, collection procedures, equipment requirements, and documentation and chain-of-custody requirements.

Quality Assurance Project Plan

The QAPP specifies the procedures and QA/QC requirements necessary to collect environmental data of sufficient quantity and quality to meet the project objectives identified for the remedial action (primarily contractor and quality confirmation sampling). The QAPP is prepared in accordance with *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations* (U.S. EPA, 1994b), which sets forth requirements as follows:

- Data quality objectives are identified.
- Intended measurements and data acquisitions are appropriate.
- QA and QC are sufficient for confirming the quality of the data.
- Limitations on the use of the data can be identified.

Dredging

Remedial alternatives under consideration for Parcel F remediation include dredging contaminated sediment for placement in an on-site confined disposal facility, a dewatering cell for eventual off-site disposal, or reuse in a constructed wetland (see Table 3.7-6). Dredging has the potential to disturb and disperse sediments, including contaminated sediments, into the water column, reducing dissolved oxygen and increasing suspended particulate material. The potential for and extent of these impacts can only be determined after the remediation strategy has been selected, project-specific sediment testing has been conducted, and a disposal or reuse site has been identified. If dredging is undertaken as a CERCLA response action, the permitting and coordination actions described below would be considered to be Applicable or Relevant and Appropriate Requirements. The Navy would also consult with appropriate regulatory agencies.

Depending on the proposed method of disposal or reuse of the dredged material, specific sediment testing program(s) are conducted in accordance with Federal and state laws and regional policies as part of the permit process for dredging and reuse or disposal of material. Testing can be tailored to the potential impacts at the specified disposal or reuse locations. Testing protocols must be approved by all reviewing agencies before commencement of the program.

In the San Francisco Bay Area, the agencies responsible for permitting dredging and dredged material disposal projects have formed a Dredged Material Management Office (DMMO). This interagency work group reviews dredged material testing programs and testing results to evaluate the adequacy and suitability of the materials for disposal or reuse in the proposed locations. Dredging projects cannot be approved without concurrence from all permitting and commenting agencies, including BCDC, San Francisco RWQCB, and the U.S. Army Corps of Engineers.

Dredged sediments are classified as suitable for unconfined aquatic disposal (SUAD) or not suitable for unconfined aquatic disposal (NUAD). Dredging NUAD material, depending on the types and concentrations of contaminants, can cause adverse effects on ecological receptors. Offshore sediments at HPS contain trace metals, SVOCs, PAHs, organochlorine pesticides, PCBs, organotins, and tributyltin. These types of contaminants can be tightly bound to particulates through a variety of physical processes. Insoluble contaminants can cause biological effects through ingestion by sediment- (deposit) feeding animals or by diffusion from the sediment into the surrounding water. Soluble contaminants are typically a greater concern, since they are more biologically active, toxic, and bioaccumulative.

If, upon completion of dredged materials testing, contaminants are found to be at soluble or insoluble concentrations capable of causing unacceptable water column effects on ecological receptors, the Navy would be required to evaluate and adopt, as necessary, special precautions and measures before undertaking dredging. Typically, dredging contaminated sediments requires the use of special dredging equipment, such as an "environmental" or closed clamshell bucket, to minimize sediment dispersal. Contaminated material placed in a barge for transport would not be permitted to overflow or be filled beyond the level that might allow spillage during transport. Other dredging equipment is available, such as high solids slurry pumps, marine excavators, and silt curtains, to minimize adverse ecological effects.

**3.7.6 The Context
 of HPS:
 The South
 Bayshore Area**

As explained in Section 5.6 (Environmental Justice), the neighborhood surrounding HPS has historically been the site of a mix of land uses, including heavy industry. Because of these past and present uses, the Bayview-Hunters Point neighborhood has the highest density of hazardous materials facilities in the City and is also the site of numerous "brownfields." U.S. EPA defines "brownfields" as "abandoned, idled or under-used industrial or commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination". The Bayview-Hunters Point Health and Environmental Task Force has documented numerous regulated sites in the area. As part of their Brownfields Pilot Project, the Agency has compiled a list of 349 sites reported on regulatory databases, including leaking USTs, hazardous materials releases, and permitted generators of hazardous waste (San Francisco Redevelopment Agency, 1998). The creation and appreciation of these inventories reflects widespread community concerns regarding health issues that may be linked to environmental factors.

3.8 GEOLOGY AND SOILS

This section describes the geology at HPS, including topography, geology and soils, erosion, landsliding, and seismic hazards. The ROI for geology and soils is the South Bayshore planning area.

3.8.1 Regional and Site Geology

HPS lies within the coast range geologic province of California. The site terrain includes an east-west trending linear ridge with steep slopes surrounded by flatlands. Elevation ranges from sea level to about 130 feet (40 m) above mean sea level (MSL) (Figure 3.8-1).

The dominant geologic processes that shape the landscape in the vicinity of HPS are the uplift of the San Francisco Peninsula and East Bay hills and the downdropping of San Francisco Bay, caused by recent strike-slip motion along the faults that comprise the San Andreas fault system (Figure 3.8-2). Movement along these faults and older geologic processes have combined to juxtapose varied and dissimilar rocks throughout the region.

The geologic materials at HPS include bedrock and a variety of relatively loose deposits, including fill and Bay Mud. The bedrock is composed of a mixture (melange) of Franciscan Formation sandstone, shale, marine chert, serpentinite, and altered volcanic rocks. Serpentinite that underlies major portions of hillsides and slopes at HPS contains naturally occurring chrysotile asbestos (U.S. Navy, 1996c), which could become a health hazard if released and inhaled. The low-lying areas of HPS consist of loose unconsolidated artificial fill materials that overlie saturated Bay Mud and undifferentiated sand deposits (Figure 3.8-3).

Soils at HPS consist mainly of undeveloped fine sands and silts on artificial fill materials. Soils developed over bedrock include Bicknell sandy loam and Montarra gravelly loam. The distribution of soils is shown on Figure 3.8-4.

3.8.2 Geologic Processes

Erosion

Erosion of soils can be caused by wind and water processes. Wind erosion occurs through removal of loose particles in areas lacking substantial vegetative cover. Areas with the greatest potential for erosion at HPS include the rock escarpment and soil boundary along Hunters Point Hill, as well as the west-central portion of Hunters Point Hill (Figure 3.8-1).

Landsliding

Areas at HPS with the greatest potential for landsliding are those on Hunters Point Hill with steep slopes and those underlain by weathered rocks or serpentinite (Figures 3.8-1 and 3.8-3). Landslides

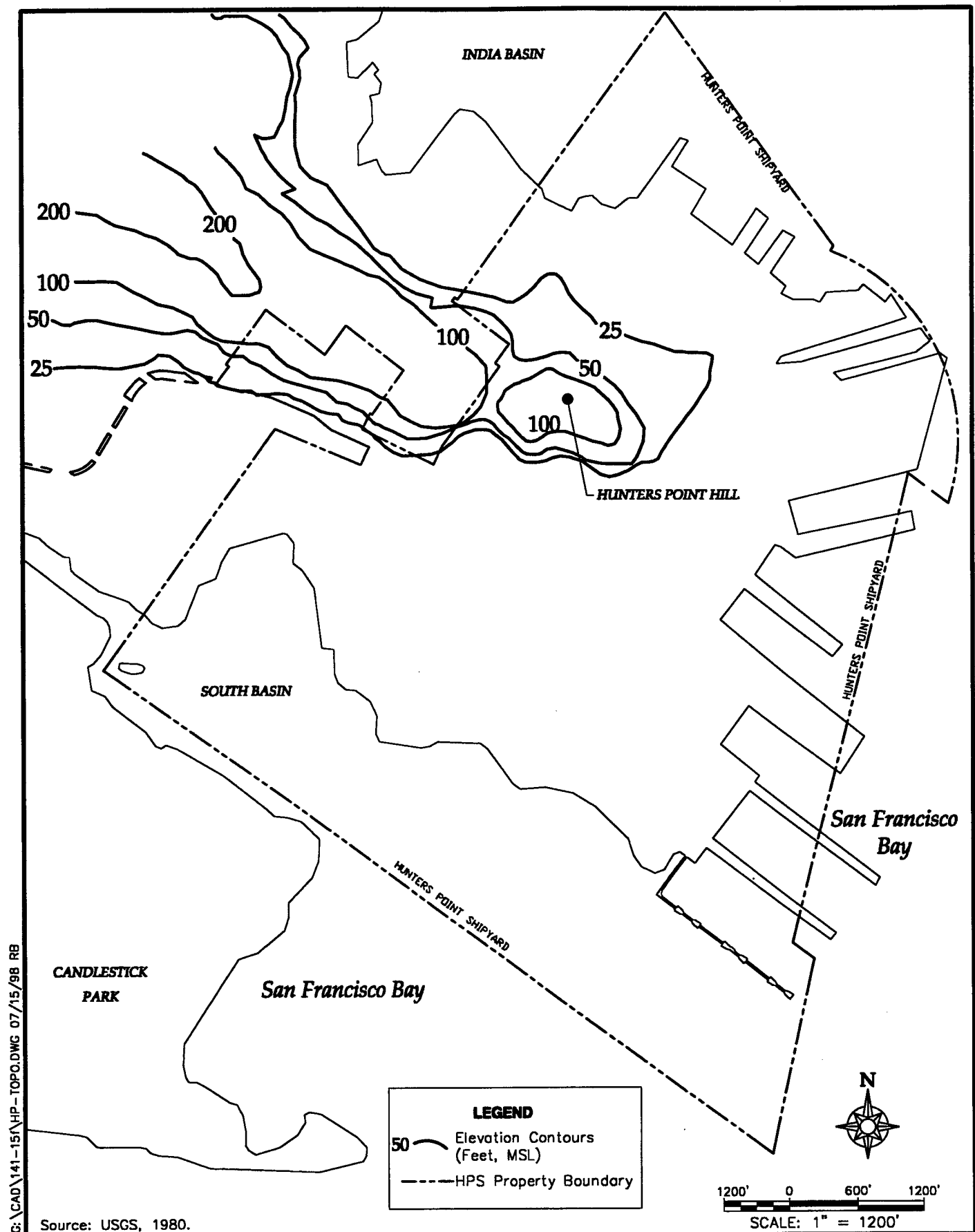
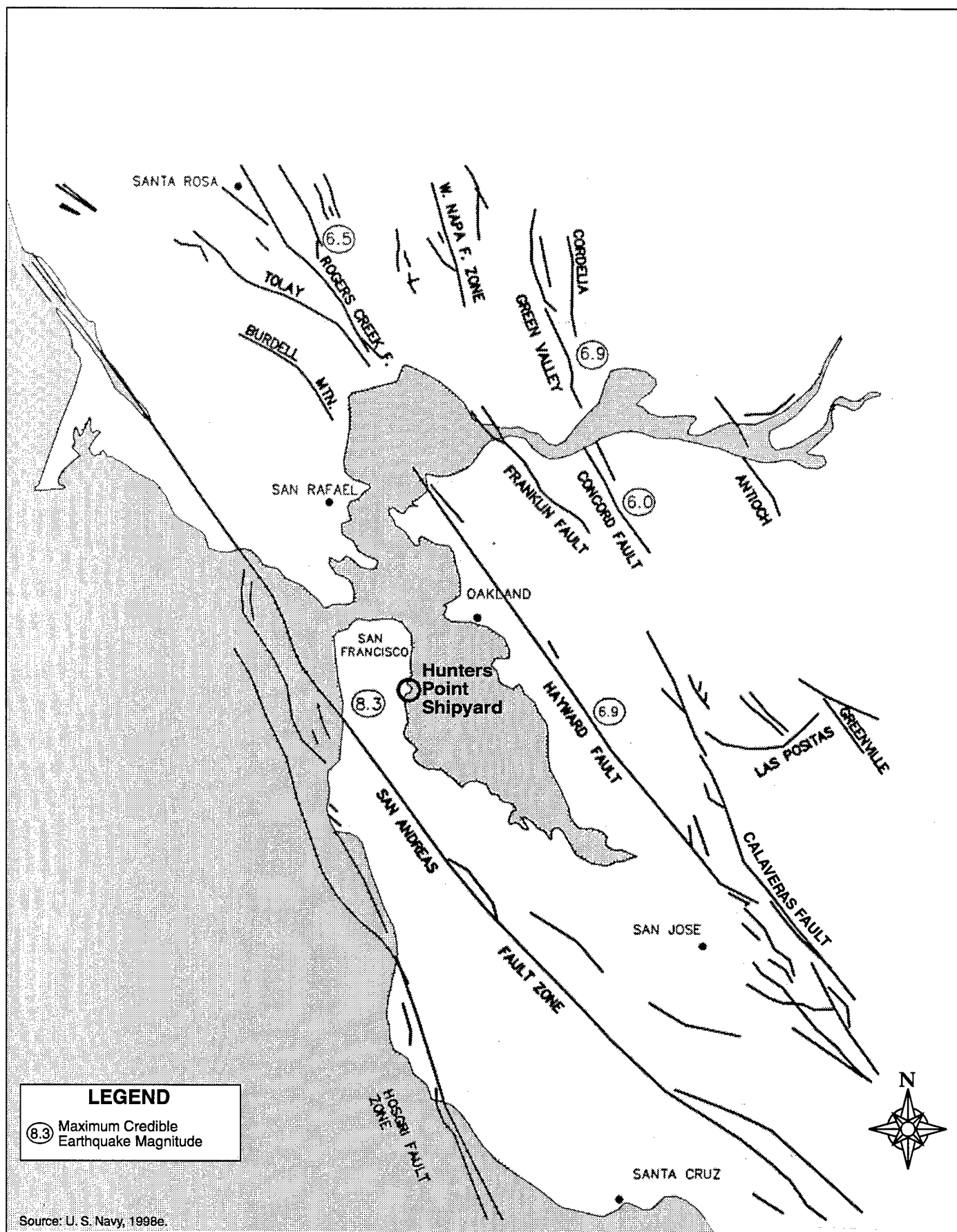
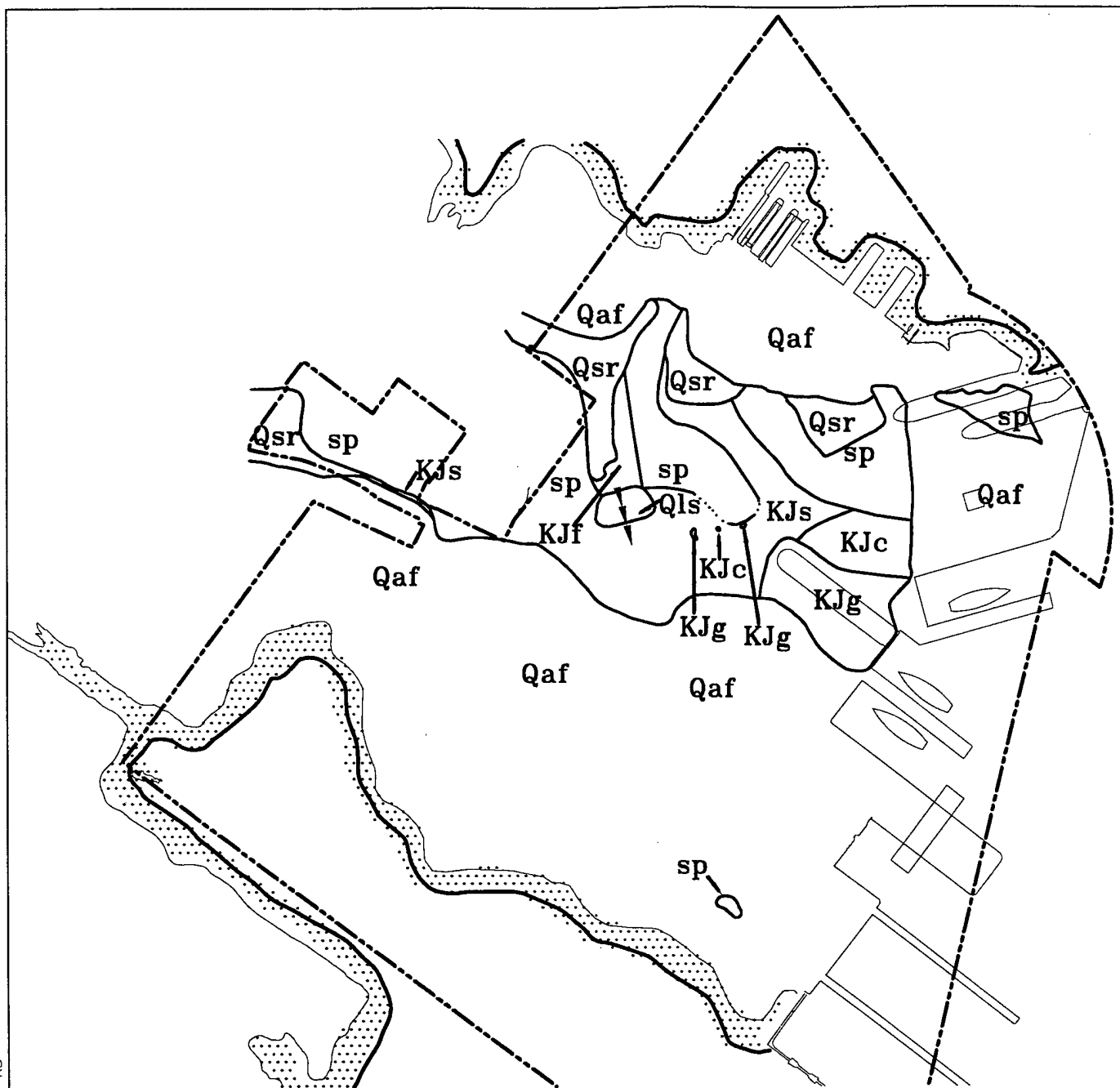


Figure 3.8-1: Topography, Hunters Point Shipyard





LEGEND

Geological Descriptions

Surficial deposits (Quaternary period)

- Qls** Landslide Debris zone (and direction of movement)
- Qaf** Artificial fill
- Qsr** Slope Debris and Ravine fill

Franciscan Complex Bedrock (Cretaceous / Jurassic period)

- KJs** Sandstone and Shale Bedrock
- KJc** Chert Bedrock
- KJg** Greenstone (altered) volcanic rock
- KJf** Franciscan formation Bedrock (Sandstone, Shale and Chert)
- sp** Serpentine Bedrock



Shoreline



Direction of Landslide movement



HPS Property

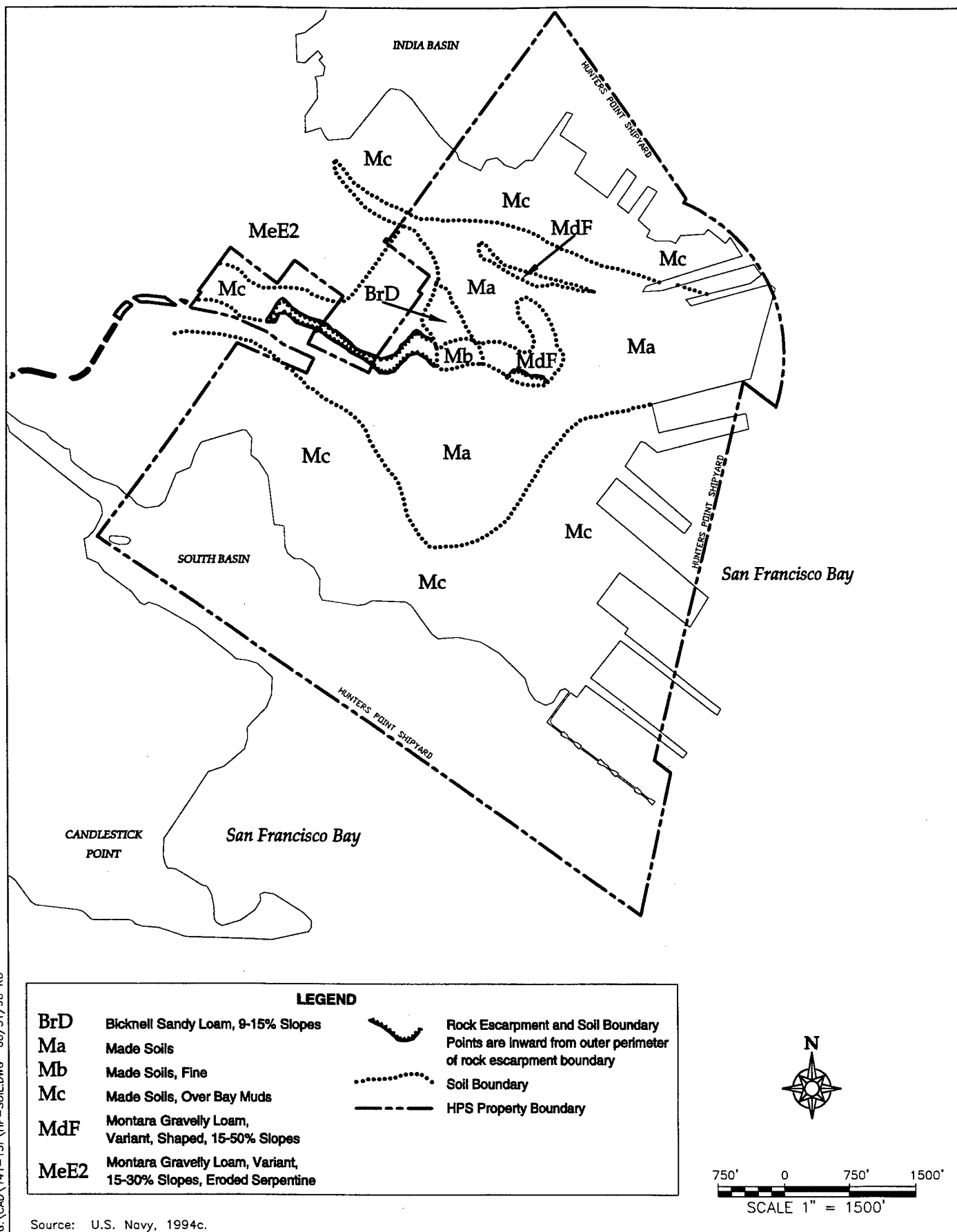


1200' 0 600' 1200'

SCALE: 1" = 1200'

Source: U.S. Navy, 1994c.

Figure 3.8-3: Geologic Conditions, Hunters Point Shipyard



are most likely to occur during periods of high rainfall and runoff (such as occurred during the high wind and rain storms of the winter of 1997-1998) or during earthquakes.

The only known area of landsliding at HPS is a 13.4-acre (5.4-ha) parcel at the east end of Hunters Point, on the hillside between Building 813 and Coleman Street (Figure 3.8-3). Investigations conducted in 1963 and 1987 indicated there was movement in these slides subsequent to hillside excavation activities in 1946. Corrective measures that have been taken to prevent further movement include flattening the hillsides and installing drains (U.S. Navy, 1994c).

Seismic Hazards

No active faults are known at HPS (U.S. Navy, 1989). Three major northwest-southeast-trending fault zones and a number of minor faults lie within 20 miles (32 km) of HPS (Figure 3.8-2). The major fault zones include the San Andreas, Hayward-Rodgers Creek, and Calaveras faults. The approximate distances from HPS to the closest portions of these fault zones are 8 miles (13 km) to the southwest for the San Andreas, 10 miles (16 km) to the northeast for the Hayward, and 20 miles (32 km) to the east for the Calaveras faults.

More than 12 large earthquakes (Richter magnitude 7 or greater) per century have occurred on the San Francisco Bay Area's major faults, and 6 large earthquakes have occurred on them since 1936. The most recent significant earthquake in the San Francisco Bay Area occurred in 1989 and was centered on the Loma Prieta Fault (part of the San Andreas Fault System) in the Santa Cruz Mountains, approximately 50 miles (80 km) southeast of San Francisco. The Richter magnitude of the Loma Prieta earthquake was measured at 7.1.

HPS is susceptible to most earthquake-related hazards due to the nature of the materials underlying the site and its location within the seismically active San Francisco Bay Area. The hazards include ground shaking, liquefaction and densification, settling, and tsunami flooding.

Ground Shaking

The San Francisco Bay Area is expected to experience very strong to violent ground shaking during large earthquakes occurring on any of the major active fault zones within the region (U.S. Geological Survey [USGS], 1990; Perkins and Boatwright, 1995). Ground shaking, and the resulting potential for damage, is considered the primary seismic hazard at HPS. The severity of ground shaking is influenced by a number of factors, including the duration and intensity of the earthquake, the proximity of the site to the location of the quake or fault, and the type of material(s) underlying the site. The Bay Mud

and uncompacted fill materials that underlie much of HPS (Figure 3.8-3) can be expected to amplify and prolong the ground shaking (Perkins and Boatwright, 1995). During the Loma Prieta earthquake, shifting and settling fill material caused structural damage to buried utilities throughout HPS (U.S. Navy, 1994c).

Estimates by the USGS (1990) of the probability of a large earthquake occurring on Bay Area faults are presented in Table 3.8-1. A revision of the 1990 study is planned for release on the tenth anniversary of the Loma Prieta earthquake (October 17, 1999). The revised probabilities are not known at this time, but they are expected to increase slightly. The largest change will likely be the probability for the northern Hayward Fault, because a significant historical earthquake that was attributed to the fault was found to have occurred in the South Bay (Bakun, 1998).

TABLE 3.8-1: ESTIMATED PROBABILITY OF A LARGE* EARTHQUAKE OCCURRING IN THE BAY AREA OVER THE NEXT 30 YEARS

FAULT	PROBABILITY
San Francisco Peninsula, San Andreas Fault	23%
Hayward Fault, Northern Segment	28%
Hayward Fault, Southern Segment	23%
Hayward Fault, Entire Length	67%
Roger Creek Fault	22%

* Richter magnitude of 7 or greater

Source: USGS, 1990

Liquefaction and Densification

Secondary effects that could result from an earthquake include liquefaction and densification. These secondary effects are most pronounced in areas where relatively loose materials, especially fill, are present. These effects are important considerations at HPS, because much of the site is underlain by materials that are susceptible to these phenomena (Figure 3.8-5).

Settling

Due to the nature of fill materials at HPS, it is possible that severe ground shaking could result in different or uneven amounts of settling throughout much of HPS (U.S. Navy, 1994c). The degree of settling depends on several factors, including the nature of building improvements, foundation design differences, the thickness and

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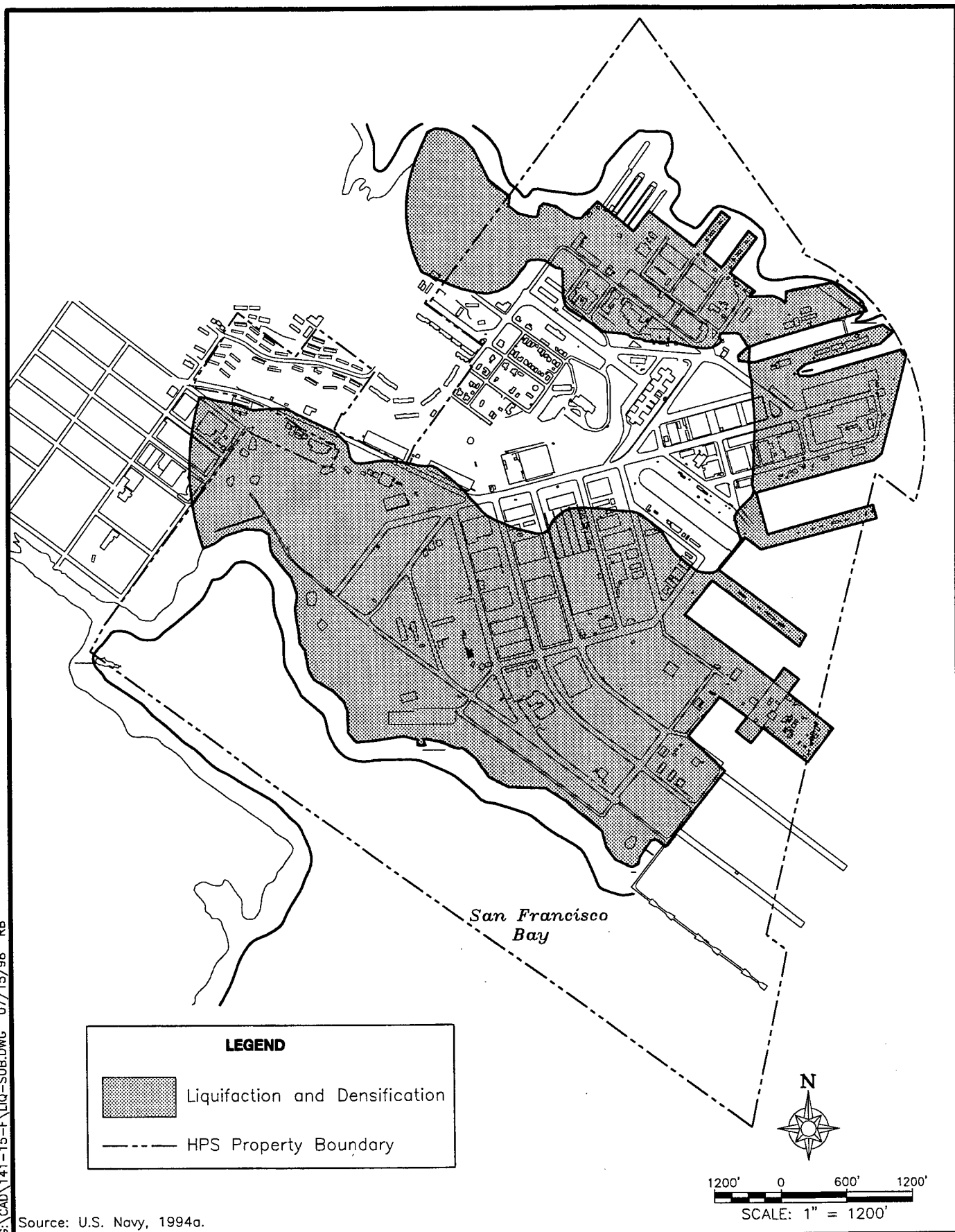


Figure 3.8-5: Areas Subject to Liquefaction and Densification, Hunters Point Shipyard

compressibility of underlying fill, and variability in the thickness of the Bay Mud underlying the fill.

Tsunami Flooding

Given its low elevation and proximity to San Francisco Bay, HPS is potentially susceptible to flooding by seismically induced tsunamis passing through the Golden Gate inlet. Although tsunamis are generated in many areas around the Pacific Rim, only Alaska's Aleutian Trench could generate tsunamis capable of causing significant runups in Northern California (Garcia and Houston, 1975). The last noticeable tsunami observed within San Francisco Bay was the result of the Great Alaskan Earthquake of 1964. Significant damage along the west coast from that tsunami was restricted to Crescent City, California, located on unprotected coastline.

Tsunamis that enter San Francisco Bay decrease in height within the Bay. The Great Alaskan Earthquake produced a maximum recorded runup of 7.5 feet (2.3 m) at the Golden Gate Bridge (City and County of San Francisco, 1974). This compares to a 7.0 foot (2.1 m) theoretical 100-year runup calculated by Garcia and Houston (1975). However, because San Francisco Bay is highly sheltered and the entrance through the Golden Gate Bridge is oblique to waves traveling from Alaska, wave magnitudes are expected to be significantly weakened. Therefore, runup at HPS due to a major earthquake in the Aleutian Islands is expected to be minor, and this expectation is consistent with the experience from the Great Alaska Earthquake.

3.8.3 Plans and Policies

The City of San Francisco Community Safety Element

The City of San Francisco's Community Safety Element of the General Plan contains several policies relevant to structural and non-structural hazards (City and County of San Francisco, Planning Department, 1997a). The following community safety policies are applicable to HPS:

- Assure that new construction meets current structural and life safety standards (New Structures Policy 2.1).
- Review and amend all relevant public codes to incorporate the most current knowledge of structural engineering (New Structures Policy 2.2).
- Consider site soil conditions when reviewing projects in areas subject to liquefaction or slope instability (New Structures Policy 2.3).

- Assess the risks presented by other types of potentially hazardous structures and reduce the risks to the extent possible (Existing Structures Policy 2.5).
- Reduce earthquake and fire risks posed by older, small wood-frame residential buildings through easily accomplished hazard mitigation measures (Existing Structures Policy 2.6).
- Abate structural and non-structural hazards in City-owned structures (Existing Structures Policy 2.7).
- Consider information about geologic hazards whenever City decisions that will influence land use, building density, building configurations, or infrastructure are made (Planning for New Development Policy 2.9).
- Promote greater public awareness of disaster risks, personal and business risk reduction, and personal and neighborhood emergency response (Emergency Preparedness and Response Policy 3.1).
- Maintain a local organization to provide emergency services to meet the needs of San Francisco (Emergency Preparedness and Response Policy 3.3).
- Maintain a current, comprehensive Emergency Operations Plan, in compliance with applicable state and Federal regulations, to guide the response to disasters (Emergency Preparedness and Response Policy 3.4).

Hazard Area Construction Requirements

The City and County of San Francisco, Department of Building Inspection administers the San Francisco Building Code, which contains special requirements for construction in areas considered susceptible to geologic hazards, such as landslides or earthquake hazards, including liquefaction. The areas are defined based upon geologic data obtained from maps, reports, and other officially recognized sources. New construction in these designated areas, and additions or renovations of particular configurations, trigger requirements for geologic and geotechnical investigations of the construction site by a licensed engineer and, if appropriate, an engineering geologist. Recommendations for hazard mitigation must be included in the geotechnical investigation report, and such recommendations must be incorporated into the structural design of the building and site.

3.9 WATER RESOURCES

This section describes water resources and water quality at HPS, including groundwater and surface water. Surface water includes storm water runoff, groundwater seeps, and San Francisco Bay. For information on water supply, see Section 3.10, Utilities. The ROI for water resources is HPS and San Francisco Bay receiving waters.

3.9.1 Groundwater

Groundwater at HPS is present in three water-bearing zones, distinguished by depth and material composition. The three zones are as follows:

- The upper water-bearing zone (A aquifer). This zone consists of saturated sandy fill materials overlying Bay Mud, with depth to groundwater ranging from 2 to 15 feet (0.6 to 4.5 m) below ground surface.
- Undifferentiated sedimentary units of sand (B aquifer). This zone consists of gravel and silt underlying Bay Mud and overlying Franciscan assemblage bedrock.
- The bedrock water-bearing zone. This zone consists of the upper weathered and deeper fractured portions of Franciscan assemblage bedrock.

The direction and gradient of groundwater flow at HPS is complex because of the differences in subsurface fill materials, effects of the storm water drainage and sanitary sewer systems, and variations in topography. In some areas, the groundwater flow direction in the uppermost aquifer is influenced by tidal fluctuations (U.S. Navy, 1998e).

The normal tidal range in the vicinity of HPS is approximately 6 feet (2 m). Water levels in monitoring wells within 400 to 800 feet (122 to 244 m) of the shoreline are directly influenced (raised and lowered) by tidal action, whereas no tidal influence is noted farther inland. Groundwater flow is generally toward the Bay; groundwater in the upper water-bearing zone can flow into the Bay, depending on groundwater elevations and tides.

Groundwater at HPS is not used for direct or indirect human consumption, such as for drinking or irrigation. Deed restrictions will prohibit the use of groundwater within the shallow water-bearing zones to 90 feet (27 m) bgs under Parcel B and on groundwater uses to 200 feet (61 m) bgs under Parcel D. Additional restrictions on groundwater use may be developed for other portions of HPS through the CERCLA process. There are no irrigation supply wells at HPS.

The nearest public or private water supply is a spring approximately 1 mile (1.6 km) northwest of HPS (upgradient). This spring flows from fractures in the Franciscan assemblage at elevations greater than 200 feet (61 m) above MSL and is used for commercial bottling water (U.S. Navy, 1998e).

Establishing background levels of metals in HPS groundwater is complicated by factors unique to HPS:

- Multiple sources of fill materials and serpentinite bedrock, yielding naturally high levels of arsenic, beryllium, cobalt, nickel, chromium, and magnesium.
- A diversity of soils with different origins, weathering states, grain sizes, and chemical, tidal, and groundwater conditions.

In addition, contamination is widespread due to past uses at HPS and in the surrounding area. These factors result in a wide range of ambient water quality readings throughout HPS.

Ambient water quality data for metals vary over a more than tenfold range from high to low, depending on location and sampling date. Ambient water quality readings for metals indicate background levels of copper, lead, mercury, nickel, silver, and zinc in excess of the NAWQC for saltwater aquatic life protection. Ambient groundwater quality was not calculated for organics, because for the purposes of remediation, it was assumed that no organics would occur naturally at HPS under ambient conditions (Sickles, 1998c).

Site investigations conducted through the IRP at HPS have identified elevated concentrations of metals (particularly copper and zinc) and organic compounds (petroleum-related hydrocarbons, PCBs, and solvents) in shallow groundwater samples (U.S. Navy, 1996b). These pollutants are the result of past disposal and storage of industrial materials and wastes (solvents and sandblasting grit) prior to waste storage and disposal regulations. Contaminated groundwater near the HPS shoreline has been identified at IR sites 10, 24, 26, and 46, but, based on dilution and attenuation modeling, contaminant levels in the groundwater are expected to drop below NAWQC levels at the tidally influenced zone. No contamination has yet reached the tidally influenced zone (McClelland, 1998b). Groundwater contamination at IR sites 25 and 28, also near the shoreline, have not yet been addressed (U.S. Navy, 1998e). The IRP at HPS includes remedial activities to address groundwater contamination (see Section 3.7).

3.9.2 Surface Water***Surface Water Occurrence***

HPS borders San Francisco Bay near Yosemite and Islais Creeks, which flow into the Bay near the facility. The San Francisco Bay system, including San Pablo and Suisun Bays, covers an area of 400 square miles (1,035 km²). San Francisco Bay receives its freshwater input from the Sacramento and San Joaquin Rivers, which contribute 680 billion cubic feet (ft³) (19 billion m³) of the total 750 billion ft³ (21 billion m³) of annual inflow. Other sources of inflow include local creeks and small rivers (U.S. Navy, 1994c).

San Francisco Bay is very shallow; most of the Bay is less than 16 feet (5 m) deep. The deepest parts are about 30 to 50 feet (9 to 15 m) deep and are in the central Bay (approximately the area of the Bay bounded by the Golden Gate Bridge, a line extending from Hunters Point to south Alameda, and the Richmond-San Rafael Bridge).

Surface water resources on HPS are limited to small groundwater seeps from exposed bedrock and the surface water in the adjacent San Francisco Bay. HPS includes approximately 443 acres (180 ha) offshore in San Francisco Bay. There are no freshwater streams or waterbodies flowing from HPS to the Bay. This portion of the Bay, however, receives surface drainage from combined sewage overflows (CSOs) and storm water runoff.

Beneficial Uses of San Francisco Bay

San Francisco Bay is used extensively for both recreational and commercial purposes, and the RWQCB Basin Plan identifies a number of beneficial uses of central San Francisco Bay waters. These uses include navigation, industrial service supply, fishing, estuarine habitat, preservation of rare and endangered species, fish migration, shellfish harvesting, and wildlife habitats, as well as water-contact and noncontact recreation.

At the Bay shoreline just south of HPS, the Candlestick Point State Recreation Area has facilities and access that promote extensive contact and noncontact water recreation. Windsurfing is popular at Candlestick Point, where there are two fishing piers and a beach that offers access to the Bay for swimmers. A boat launch also has been constructed in this area. In addition, the Bay shoreline supports, in places (including portions of the HPS shoreline), a fringe of wetland habitat. Clams, oysters, and other invertebrates are found in the mudflats along the shoreline. Although there is no remaining commercial Bay shellfish industry, there are minor shellfish beds at Candlestick Cove and South Basin, and clams have been collected by recreational fishermen, despite public health warnings. Bay waters provide habitat for a number of fish species and a relatively large population of waterfowl and shorebirds.

Fishing and water-contact recreation are not currently permitted at HPS.

3.9.3 Water Infrastructure

HPS Storm Water Collection System

About 90 percent of HPS is served by storm sewers that drain directly to the Bay. The remainder of HPS, consisting primarily of undeveloped shoreline areas, drains to the Bay via overland flow and throughflow.

The storm water system is described in detail in Section 3.10, Utilities. Most of the system was built between 1942 and 1946 as a combined storm sewer and sanitary sewer system. Projects to separate the two effluent components were conducted in 1958, 1973, and 1976. All known remaining interconnections between the two systems were separated under the Navy's Storm Water Program (U.S. Navy, 1998e). The original combined system was designed to carry runoff from a two-year storm event, except for isolated areas and under-designed pockets. Even with the current separated system, localized ponding occurs, and the volume of overland flow increases in larger-magnitude events. Tidal flooding of the storm drain lines occurs at high tides in low-lying areas throughout the site.

The City's preliminary assessment of the existing storm water system indicates that it does not operate to City standards and will require substantial repairs or replacement (City and County of San Francisco, Public Utilities Commission, 1998a).

San Francisco's Combined Sewer System

Most of the City is served by a combined sewer system, which collects and transports both sanitary sewage and storm water runoff in the same set of pipes. Most storm water runoff in the City is diverted to the combined sewer system. The City is sub-divided into wastewater drainage basins for the combined sewer service. HPS is within the Yosemite drainage basin, and all sanitary sewage (or dry-weather flow) from HPS flows to the Yosemite basin.

The SEWPCP treats all sanitary flow and most of the combined sewer flows on the Bayside of the City, including Yosemite basin. The plant has a capacity of 150 million gallons per day (mgd) (567 million liters per day) of secondary treatment and an additional 100 mgd (379 million liters per day) capacity for primary treatment. During dry weather, treated secondary effluent from the SEWPCP is discharged to the Bay through a deep water outfall near Pier 80. During wet-weather events, the secondary treated effluent is discharged through an outfall into Islais Creek near Third Street, and up to 100 mgd (379 million liters per day) of primary treated effluent is discharged through the deep water outfall.

During heavy rainstorms, the transport, storage, and primary and secondary treatment capacities of the combined sewer system and SEWPCP can be exceeded. When this occurs, excess combined sewage bypasses the SEWPCP and is discharged directly to the Bay through numerous CSO points along the Bay shoreline. This discharge, which is about 94 percent storm water, receives "flow-through" treatment to remove settleable solids and floatable materials (roughly equivalent to primary treatment). The combined sewer system is operated to minimize and eliminate these overflows to the extent possible. The system is designed such that on average, only one overflow event per year occurs at the Yosemite basin overflow structures.

A City-wide effort is currently underway to address the cumulative effects of increased development on the City's combined sanitary sewer and storm water system. The San Francisco Public Utilities Commission (PUC) has analyzed potential revisions to drainage patterns for the entire east side (referred to as the "Bayside") of the City (see the PUC's cumulative study, referenced as the City and County of San Francisco, Public Utilities Commission, 1998b and 1998d).

Under base case conditions, total Bayside wastewater/combined sewer flow is estimated to be about 31,113 million gallons a year (mgy) (118 billion liters a year). Total Bayside overflows are estimated at 910 mgy (3.4 billion liters per year), or about 2.9 percent of overall flows. About 5.3 million gallons (20 million liters) of these overflows are from the Yosemite system, including HPS.

3.9.4 Water Quality

San Francisco Bay Water Quality

Historically, elevated concentrations of metals have been found in San Francisco Bay waters. Most of these metal concentrations have been reduced to acceptable levels in the last 20 years by implementing measures to control the source of metals and by improving the treatment processes at wastewater treatment plants. Point sources, such as landfills and industrial discharge outlets, continue to introduce metal contaminants into San Francisco Bay.

Water pollutants enter San Francisco Bay from various sources, including municipal and industrial effluents, urban runoff, land erosion in the Bay region, major tributaries to the Bay estuary (i.e., the Sacramento and San Joaquin Rivers and their tributaries), dredging and disposal of dredged materials, atmospheric deposition, spills, and marine discharges. Some mixing of these inputs occurs through twice-daily tides. During each ebb-flood tidal cycle, 10 to 30 percent or more of the Bay water is replaced by ocean water. During dry weather, each tidal cycle replaces about 24 percent of the volume of the Bay with ocean water. During wet weather, freshwater inflow from the

Sacramento-San Joaquin river system can increase the exchange ratio to over 80 percent in a tidal cycle. In the central Bay near HPS, there is less flushing and mixing in the summer than in the winter (San Francisco Bay-Delta Aquatic Habitat Institute, 1991). Circulation in confined areas, such as Yosemite Slough, is more restricted than in open Bay waters.

The State Water Resources Control Board (SWRCB) has listed central San Francisco Bay as impaired on the basis of field surveys of the water column, sediments, sediment toxicity, bivalve bioaccumulation, and water toxicity. This determination relates to levels of copper, mercury, selenium, diazinon, and PCBs (SWRCB, 1997; Mumley, 1998). These constituents are discussed below.

Copper. Copper enters the Bay through municipal/industrial sources, storm water runoff (primarily through automobile brake pad dust), and other nonpoint sources (such as soils and abandoned mines). These three main copper sources contribute roughly equivalent amounts.

Mercury. The main source of mercury in the Bay is erosion and drainage from abandoned gold and mercury mines. Other sources include natural sources, atmospheric deposition, and various industrial and municipal sources.

Selenium. Selenium enters the Bay through industrial point sources (e.g., oil refineries), agricultural return flows, and natural sources. Control programs are in place to address selenium discharges from oil refineries and certain agricultural flows.

Diazinon. Diazinon enters the Bay via runoff from agriculture and, to a lesser extent, residential land uses. Diazinon is a primary component of insecticides.

PCBs. Although PCBs are no longer manufactured in the U.S., PCBs previously released to the environment enter the Bay via storm water runoff and are transported through the food chain. PCB levels in fish have resulted in health advisories for fish consumption.

A 1989-1990 study by the Institute of Marine Sciences, University of California at Santa Cruz, found that HPS met the SWRCB's Basin Plan water quality objectives. Copper values reported in samples from both HPS and mid-South Bay, however, exceeded the San Francisco RWQCB's 1992 site-specific water quality objective of 4.9 micrograms per liter ($\mu\text{g}/\text{l}$). Average concentrations of total copper at HPS stations exceeded the U.S. EPA 1-hour average copper criterion of 2.9 $\mu\text{g}/\text{l}$ for protecting saltwater aquatic life. All trace metals, except for cobalt, tended to be highest near HPS (U.S. Navy, 1995a). According to the

1995 Regional Monitoring Program Annual Reports for San Francisco Bay, pollutants most frequently exceeding water quality objectives or criteria included copper, mercury, nickel, and PCBs (San Francisco Estuary Institute, 1995).

Near-shore Bay Water Quality/CSO Water Quality

Direct storm water discharges enter the Bay in the near-shore tidal zone. Materials contained in storm water discharges disperse throughout the Bay according to patterns of mixing and dispersion dictated by flow volumes, tidal currents, and vertical mixing (see the Mission Bay Supplemental EIR, referenced as the City and County of San Francisco, Planning Department and San Francisco Redevelopment Agency, 1998). Pollutants end up in different places in the Bay system (e.g., shallow water, deep water, sediments), depending on their association with particulate matter, solubility, and patterns of sediment resuspension, dispersion, and resettling.

Treated CSOs enter San Francisco Bay at shoreline locations and in waterways and embayments with restricted water flow and mixing. CSOs are subject to the same processes of dispersion, partitioning, and mixing as are discharges from storm water outfalls (although CSOs are partially treated prior to discharge). Through these processes, pollutants from treated CSOs are mixed into the Bay system. The effects of storm water discharges and CSOs are reflected, along with numerous other pollutant sources, in the existing Bay water quality.

Studies have evaluated the impacts of treated CSOs from the combined sewer system on aesthetics, shellfish contamination, fish populations, benthic populations, and the bioaccumulation of potentially toxic materials in San Francisco Bay biota. Studies of dispersion and mixing have shown that treated CSOs are rapidly diluted and that oxygen concentrations are not greatly affected (City and County of San Francisco, 1979). Neither the concentrations of pollutants, nor the duration of exposure to pollutants in treated CSOs, appear to cause acute toxicity in the biota or receiving waterbodies (City and County of San Francisco, 1979). Effects of treated CSOs were evaluated with regard to the long-term bioaccumulation of pollutants in the tissues of Bay fishes and invertebrates. Where pollutant bioaccumulation was noted (City and County of San Francisco, 1979), the dynamics of the biota considered and the widespread transport of sediment-associated contaminants in San Francisco Bay made it impossible to assign a specific source to the contaminants that caused the bioaccumulation.

In the short term, treated CSOs do not affect benthic (bottom-dwelling) and aquatic populations in the near-shore Bay to a great extent, primarily because the less dense, freshwater CSOs remain on the

surface of the near-shore waters and do not penetrate to the bottom. Particulate material (settleable solids) from treated CSOs may settle to the bottom in areas where there is less water movement. The high organic content of the particulate material from the treated CSOs generally leads to dense populations of pollutant-tolerant benthic organisms, relatively limited in species diversity. None of the studies that evaluated the effects of CSOs on benthic organisms found it possible to discern the direct effects of the CSOs from the overall, long-term impact of sediment deposition, resuspension, and redeposition in the Bay.

Discharge of treated CSOs can affect beneficial uses of the Bay in the project area. As part of the City's permit requirements for its wet-weather facilities, the City conducts thrice-weekly, year-round water quality monitoring. This monitoring includes standard observations (including presence of foam, floating materials, odors, and other evidence of pollutants) and tests for total coliform bacteria. The monitoring station nearest HPS is close to the Candlestick Point State Recreation Area.

Coliform test data are used as an indicator of bacteriological water quality for public health protection at beaches with water-contact recreation. Upon commencement of a CSO event, the San Francisco Health Department requires that the City immediately post warning signs at the beaches. Signs are removed when coliform concentrations are measured below the level of concern. Because water coliform tests require 48 hours for completion, beaches remain closed for an average of 3 days after a CSO. The state-recommended water-contact recreation standard for total coliform is less than 1,000 total coliform units (CFU) per 100 milliliters (ml) of water, Cal. Code Reg. tit. 17, Group 10, Article 4, §§7958-7959.

HPS Storm Water Quality

Storm water runoff from urban areas is a known source of pollutants in receiving waters. Typical sources of pollutants from parking lots include fluid leaks from vehicles, brake pad wear, tire abrasion, pavement wear, sediments, pesticides from landscaped areas, and atmospheric deposition. Types of pollutants may include oil and grease, metals, hydrocarbons, and organic pollutants, as well as sediments.

Storm water runoff from HPS has been reported to contain traces of industrial pollution (U.S. Navy, 1998e). Hydrocarbons were detected and visible sheens observed in very small storm water samples collected and analyzed in compliance with the provisions of the California General Industrial Activities Storm Water Permit (General Industrial Permit) (U.S. Navy, 1995a).

The Navy has undertaken quarterly or more frequent storm water monitoring at 11 locations, as well as monitoring and inspection of 29 previously identified, potentially problematic industrial activity sites. In 1997-1998, monitoring identified occasional high levels of Total Suspended Solids (TSS), conductivity, and Total Organic Carbon (TOC) in storm water samples. In addition, high levels of zinc, copper, lead, and nickel were identified at several monitoring points. These pollutants were associated with past and ongoing industrial uses at the site, including scrap metals operations (Radian International, LLC, 1998).

3.9.5 Plans and Policies

Federal and State Requirements

Water Quality Control Plan (Basin Plan)

The San Francisco RWQCB is responsible for regulating and enforcing Federal and state water quality standards in the Bay Area, including but not limited to the Bay. As part of its water quality control program, the RWQCB adopted a Basin Plan for pollutants in the Bay Area in June 1995. In addition to the Basin Plan, many other plans and policies direct RWQCB actions or clarify the regional board's intent. Plans and policies that may be applicable to HPS include the following:

- *Antidegradation Policy (Resolution 68-16)*: Requires the continued maintenance of existing high quality waters.
- *Sources of Drinking Water Policy (Resolution 88-63)*: Assigns municipal and domestic supply designations to all waters of the state with certain exceptions.
- *Policies and Procedures for Investigation and Remediation and Abatement of Discharges (Resolution 92-49)*: Defines the goals of pollution cleanup and abatement as achieving the best quality of water that is reasonable.

National Pollution Discharge Elimination System (NPDES)

In 1992, the U.S. EPA and the State Water Resources Control Board (SWRCB) began implementing a comprehensive storm water permitting effort under the NPDES permit program. This program requires permits and a storm water pollution prevention plan (SWPPP) for industrial facilities. The SWRCB has issued a statewide general industrial permit that applies to all industrial storm water discharges requiring a permit.

The Navy filed a notice of intent to obtain coverage under the general industrial permit and was issued an interim permit for discharge of storm water from storm water outfalls at HPS (U.S. Navy, 1998e). As required by the general industrial permit, a SWPPP has been prepared

for HPS (U.S. Navy, 1994c; U.S. Navy, 1995a; U.S. Navy, 1998e). The SWPPP prescribes measures to control pollutants in storm water discharges and is described below. The effectiveness of the control measures is tracked by monitoring. A pollution prevention coordinator (PPC) is responsible for implementing and monitoring the SWPPP. Among other tasks, the PPC is responsible for coordinating two dry-season inspections annually to monitor for the presence of non-storm water discharges and at least two wet-season storm water sample collections. The PPC also coordinates an annual inspection to ensure that best management practices (BMPs) are being used and to identify additional BMPs, if necessary. Measures to reduce non-storm water discharges and illicit sewage system connections to the storm water drainage system are identified in the SWPPP.

The City has two NPDES permits for discharges to the Bay from the City's combined sewer system: one for dry-weather discharges from the SEWPCP and another for wet-weather discharges from the SEWPCP, the Northpoint facility, and CSOs along the City's Bay waterfront, including HPS.

NPDES Permit No. CA0037664, Order No. 94-149, as amended by 96-116, governs dry-weather discharges from the SEWPCP. Discharges are regularly monitored to assure protection of Bay water quality. If necessary, pretreatment of industrial discharges may be required prior to discharge into the City's sewer system, in accordance with requirements of the San Francisco Public Works Code, Article 4.1, Industrial Waste or Sewer Use Ordinance. The City is revising this ordinance to include storm water provisions for discharges from various nonindustrial facilities to the combined sewer system.

NPDES Permit No. CA0038610, Order No. 95-039, governs discharges from CSOs at locations along the City's Bay waterfront, including HPS. Discharge of partially treated effluent occurs only when the storm flow exceeds the combined storage capacity of the wastewater storage/transport facilities and the capacity of the pumping facilities to transfer flows to the treatment plants. The NPDES permit requires the treatment facilities to be designed so that CSO discharges occur, on average, once per year for the areas south of Islais Creek. This permit condition is intended to protect shellfish beds along the southeast City shoreline and other beneficial uses.

Drydock 4 at HPS is leased to Astoria Metals for dismantling ships. Astoria Metals holds an NPDES permit under San Francisco RWQCB Order 92-134. This permit is expiring, and Astoria Metals has reapplied.

HPS Storm Water Pollution Prevention Plan

In compliance with the Federal Clean Water Act, 33 U.S.C. § 1251, *et seq.*, the Navy has prepared a SWPPP for HPS (Radian Corporation, 1996). The goal of the SWPPP is to minimize storm water pollution, improve water quality, and comply with storm water regulations in accordance with the General Industrial Permit. The SWPPP includes BMPs to prevent or mitigate storm water pollution. These practices include those that apply to HPS generally and those that apply to certain specific industrial activities. Base-wide BMPs include good housekeeping practices, source control measures, and storm water management practices such as the following:

- Covering trash receptacles
- Preventive maintenance of machinery and vehicles
- Control of illicit discharge
- Spill and accidental discharge prevention and response
- Training
- Inspections
- Erosion and sediment control

Site-specific BMPs are recommended for 36 sites at HPS, including vehicular and equipment maintenance, storage, and cleaning sites; outdoor storage sites for hazardous materials; other waste handling sites; other outdoor storage and loading/unloading sites; and sites with contaminated or erodible surfaces. As a result of 1997-1998 storm water monitoring, recommended actions in the SWPPP for industrial activity sites included the following (Radian International, LLC, 1998):

- Review drainage areas to see if any erosion controls are needed.
- Properly store scrap metal.
- Remove sandblast grit and place drip pans beneath leaking vehicles.
- Add outfalls to the monitoring program, continue BMP inspections at Astoria Metals, and implement all BMPs.

In addition to the industrial activity sites, 77 IR sites also were evaluated for their potential to contribute to storm water pollution through infiltration of contaminated groundwater into the storm sewer system. Site-specific BMPs were not recommended for the IR sites because no specific instances of groundwater intrusion into the storm sewer system have been confirmed (Radian Corporation, 1996).

3.10 UTILITIES

This section describes the utility systems that serve HPS, including the potable water supply and distribution, nonpotable water supply, storm water collection, sanitary collection, electric, natural gas, telephone service, and solid waste disposal systems. These utility systems have deteriorated and have not received regular maintenance for at least the past five years. Therefore, the systems are in need of repair, maintenance, and upgrades (City and County of San Francisco, Public Utilities Commission, 1998a). The ROI for utilities is the South Bayshore planning area.

3.10.1 Water Systems

Potable Water Supply and Distribution System

The potable water demand for HPS is approximately 170,000 gallons per day (gpd) (643,450 liters per day) (City and County of San Francisco, Public Utilities Commission, 1998c). This demand is about 0.2 percent of the 80 mgd (303 million liters per day) used by San Francisco.

Potable water is provided by the San Francisco Water Department (SFWD) through two metered services, which have no backflow prevention devices. Distribution for both domestic use and fire protection is via 8- and 16-inch (20- and 40-cm) mains. The resulting service pressure is adequate for domestic use but not for fire protection. The main along Crisp Avenue supplies most potable water at HPS, including the needs of ships berthed at piers, wharves, or in drydock. The 8-inch (20-cm) main along Jerrold Avenue supplies the former housing area and administrative buildings.

Much of the potable water system piping is approximately 55 years old and was installed when HPS was constructed in the early 1940s. Some sections have been replaced with polyvinyl chloride lines (City and County of San Francisco, Public Utilities Commission, 1998a). Testing shows most of the piping to be in good condition, with some piping in the waterfront area in fair to poor condition due to external corrosion (U.S. Navy, 1998e). The upper housing area's water distribution system has been abandoned, although a 410,000-gallon (1.5-million liter) tank remains connected to it. The valves that were used to isolate this tank do not hold, and leakage has continued to fill it. In addition, a main service vault on the line is in a building that was purchased by a private firm, and the Navy has not maintained the system or valves in recent years. The last major break required shutting down most of the system for repair. Isolation valves could neither be located nor closed (City and County of San Francisco, Public Utilities Commission, 1998a).

High levels of lead, trihalomethanes, and oil and grease were measured in the tap water of Building 606, occupied by the San Francisco Police Department (City and County of San Francisco, Public Utilities Commission, 1998a). Although sources have not been determined, the high lead concentration may be attributable to lead solder in pipes, and trihalomethanes may be from the water treatment process. Oil and grease in tap water may be introduced into the distribution system during modifications to pipes (McClelland, 1998a; Sickles, 1998a).

The Navy performed several computerized flow analyses and field flow tests on the potable water distribution system. These analyses show that the distribution system has insufficient water pressure for fire-fighting requirements in the Parcel A area served by the Jerrold Avenue water main (U.S. Navy, 1998e). In addition, the fire hydrants at HPS conform to Navy standards but do not match the size of San Francisco Fire Department's hydrant connection hoses.

Nonpotable Water Supply Systems

The SFWD is working on a groundwater master plan that will describe existing groundwater resources within San Francisco, including HPS, and will identify potential uses. Since 1989, the San Francisco PUC and the SFWD have been evaluating the potential uses of reclaimed water. The revised Draft Water Recycling Master Plan, Apparent Best Alternative, identifies commercial development of HPS as a potential user of reclaimed water for industrial purposes (City and County of San Francisco, 1995).

The Navy used saltwater at HPS for fire protection and cooling and for flushing ships' systems. There are three saltwater systems: a low-pressure system that serves portions of the waterfront and the HPS industrial area, an old (1940s) high-pressure system, and a newer (1986) high-pressure system. The low-pressure system is inoperable. The old and new high-pressure systems serve Drydock 4 and the North and South Piers. The Navy has not used the saltwater systems since 1991 (U.S. Navy, 1998e).

3.10.2 Storm Water Collection System

Storm water at HPS flows into San Francisco Bay from the highlands to the surrounding lowlands and from the lowlands themselves. About 10 percent of HPS, primarily along the undeveloped shoreline, does not have storm drains (U.S. Navy, 1998e). These areas drain through overland flows to the Bay.

The storm collection system includes 107,000 linear feet (32,614 m) of lines (2- to 54-inch [5- to 137-cm] diameter), 624 catch basins, 321 manholes, and 37 outfalls (6- to 72-inch [15- to 183-cm] diameter). The pipelines are made of concrete and vitrified clay (U.S. Navy, 1998e).

The Navy built most of the system from 1942 to 1946 as a combined sanitary and storm sewer system. The Navy performed projects to separate the sanitary and storm drainage systems in 1958, 1973, and 1976. The Navy separated the remaining known cross connections between the two systems under the Navy's Storm Water Program (U.S. Navy, 1998e).

The combined system was designed for a two-year storm event (not the City's standard of a five-year event), with the exception of some isolated and under-designed pockets. During larger magnitude storms, ponding occurs, and the volume of overland flows increases. Tidewater flooding of the storm drain lines occurs in low-lying areas throughout the site. Localized flooding and backing of Bay water into the system occurs with some frequency (see Section 3.9, Water Resources).

In 1994, the Navy cleaned storm drains and catch basins in Parcel A. In 1997, they cleaned drains and basins in the other HPS parcels. About 90 percent of the storm lines at HPS were surveyed and cleaned. The Navy did not clean lines located beneath the groundwater table in Parcels B, C, and E because they are close to the shoreline, and cleaning could cause excessive groundwater infiltration and/or tidal influence (Sickles, 1998a). Some outfalls could not be located and therefore were not cleaned. There may be separator or settling vaults at the outfalls that also have not been located, inspected, or cleaned (City and County of San Francisco, Public Utilities Commission, 1998a).

The City's preliminary assessment of the storm drain system indicates that it does not operate up to City standards and would require substantial repairs or replacement (City and County of San Francisco, Public Utilities Commission, 1998a).

Almost all of HPS is subject to the statewide NPDES Industrial Activities Storm Water General Permit. Astoria Metals Corporation has an individual NPDES permit to operate Drydock 4.

3.10.3 Sanitary Collection System

The gravity sanitary sewer system at HPS was originally part of a combined sanitary and storm water drainage system installed in the 1940s that was later separated (U.S. Navy, 1998e). The sanitary system consists of cast-iron, concrete, and vitrified clay sewers (4- to 33-inch [10- to 84-cm] diameter), with a total linear length of approximately 67,000 feet (20,422 m). There are eight pump stations, of which two are significant to system operation. The sewer system pipelines go to HPS Pump Station A (Building 819/823), which is capable of pumping up to 2 mgd (7.6 million liters per day). From the pump station, wastewater goes to the City's sewage treatment system at Griffith

Street and then flows to the SEWPCP on Jerrold Avenue between Phelps and Quint Streets.

Daily wastewater discharges at HPS contribute approximately 245,000 to 300,000 gpd (927,325 to 1,135,500 liters per day) or 1 percent of average sewer gravity flow recorded at the SEWPCP. Table 3.10-1 presents the estimated daily treatment capacities of the SEWPCP during wet and dry weather and the average daily contribution of HPS to the total flow.

**TABLE 3.10-1:
SEWPCP TREATMENT CAPACITIES AND FLOWS**

CAPACITY AND FLOW	VOLUME
Peak Capacity, Dry Weather	150 mgd
Peak Capacity, Wet Weather	210 mgd
Total Average Dry-Weather Flow	65-70 mgd
Total Average Wet-Weather Flow	150-250 mgd
Daily Contribution of HPS to SEWPCP	245,000-300,000 gpd

Source: City and County of San Francisco, 1996 and City and County of San Francisco, Public Utilities Commission, 1997.

The last engineering study of the HPS sanitary collection system was conducted in 1988, when deficiencies were noted in the system's physical condition and hydraulic layout. The Navy classified the collection system as poor due to sags and dips, leaky and broken joints and pipes, eroded pipe bottoms, infiltration, damaged manholes, debris and silt deposits, and construction deficiencies. These factors cause continual blockages and plugging. The aging system has had poor maintenance and is subject to low flow (less than 2 feet per second [0.6 m per second]) and subsiding soil (City and County of San Francisco, Public Utilities Commission, 1998a).

In 1988, infiltration was measured at 160,000 gpd (605,600 liters per day) during dry weather and 1,760,000 gpd (6,661,600 liters per day) during wet weather (City and County of San Francisco, Public Utilities Commission, 1998a). Remedial Investigation (RI) reports prepared by the Navy show that this over ten-fold increase in flow quantities is probably due to leakage in the sewer system, causing groundwater infiltration (Sickles, 1998b). The PUC, however, believes that the increased flows may be caused by cross connections between the storm and sanitary sewers that still exist (City and County of San Francisco, Public Utilities Commission, 1998a).

3.10.4 Electric and Natural Gas Systems

Electric System

PG&E provides electric service to HPS customers via overhead distribution lines to service meters. Six underground service lines

have incorporated existing Navy cables and ducts to remote customers. The condition of these underground lines is unknown. The Navy has abandoned equipment and devices from the old system and in buildings (City and County of San Francisco, Public Utilities Commission, 1998a). The current electrical demand at HPS averages 9.6 million kilowatt-hours (kWh) per year. The street lighting system throughout HPS has been abandoned, although some of the lights might be salvageable.

Natural Gas System

PG&E provides natural gas service to Navy tenants and bills customers directly. The original HPS natural gas distribution system was extensively damaged in the 1989 earthquake and was abandoned; it is not salvageable (City and County of San Francisco, Public Utilities Commission, 1998a). Gas distribution lines are in place along Crisp, Fisher, Galvez, Hudson, Innes, and Spear Avenues and Donahue, Lockwood, and Robinson Streets.

3.10.5 Telephone Service

Pacific Bell provides telephone service to Building 813, where the line is trunked out to other buildings at HPS via overhead and underground lines. New phone line installations for HPS tenants are installed at the tenant's expense (Sarmiento, 1996).

3.10.6 Solid Waste Disposal

A commercial solid waste company, Sunset Scavenger, collects solid waste at HPS under contract to the City. The waste is hauled to the Altamont Landfill near Livermore, California. Solid waste generated at HPS amounts to approximately 24 tons (22 metric tons) annually (U.S. Navy, 1994a). In 1996, San Francisco generated 1,115,700 tons (1,012,386 metric tons) of solid waste (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1998); approximately 35 percent of the waste was recycled. The solid waste generated by HPS contributed less than one percent of the City's 1996 solid waste generation total. Using the 1996 diversion rate of 35 percent, HPS is estimated to contribute about 16 tons (14.5 metric tons) of waste to the landfill and 8 tons (7 metric tons) for recycling annually.

In 1996, approximately 745,000 tons (676,013 metric tons) of City solid waste was disposed of in the Altamont Landfill. The Altamont Landfill has a total planned capacity of approximately 67 million tons (60.8 million metric tons), of which 35.7 million tons (32.4 million metric tons) is permitted (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1998).

3.10.7 Plans and Policies

Potable Water Distribution System

Sampling requirements for lead and copper in drinking water are outlined in the Safe Drinking Water Act (SDWA) of 1974, 42 U.S.C. §

300(f), *et seq.* The U.S. EPA has regulatory authority over public drinking water systems.

Storm Water Collection System

Almost all of HPS is subject to the statewide NPDES Industrial Activities Storm Water General Permit. Astoria Metals Corporation has an individual NPDES permit to operate Drydock 4.

Sanitary Collection System

The main regulatory laws that govern wastewater discharges at HPS are the CWA, 33 U.S.C. § 1251, and the state Porter-Cologne Act, Cal. Water Code § 13000 *et seq.* The San Francisco RWQCB has permitting authority over the HPS system.

Solid Waste Management

The Solid Waste Disposal Act (SWDA) of 1965, 42 U.S.C. § 6901, *et seq.*, as amended by RCRA, 42 U.S.C. § 6901, *et seq.*, requires that Federal facilities comply with all Federal, state, interstate, and local requirements regarding the disposal and management of solid waste. The California Integrated Waste Management Act, Cal. Pub. Res. Code § 40050, *et seq.*, requires California counties to divert 25 percent of their solid waste from landfills by 1995 and 50 percent by 2000. Cal. Pub. Res. Code § 42000-42023 established state programs designed to increase recycling and to encourage developing commercial markets for recyclable materials. In general, the state places the burden of action and responsibility for meeting state requirements on the county.

3.11 PUBLIC SERVICES

This section describes police, fire protection, and emergency medical services at HPS and for the City, which will provide these services following property transfer. The ROI for public services is HPS and the City.

3.11.1 Police Services

The Navy has exclusive responsibility for law enforcement at HPS except on Parcels A and E, where jurisdiction is proprietary (state regulators are allowed to enforce state law). The HPS police department employs 18 officers who provide law enforcement and security services to HPS. The department does not have a mutual aid agreement with the SFPD.

The SFPD employs a total of 2,043 officers that staff 10 district stations (Lacampagne, 1996). The station closest to HPS is the Bayview Station at 201 Williams Street. This station has a staff of 87 officers, and its service area extends from the China Basin Channel south to the City and County line (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1998).

Building 606 at HPS is leased to the Agency for use by SFPD special operations, which includes the Special Weapons and Tactics (SWAT) division (Brown, 1998). The Agency also is proposing interim use of additional land adjacent to Building 606 for a helicopter landing pad.

3.11.2 Fire Protection and Emergency Medical Services

The HPS fire department in Building 215 provides fire prevention, fire suppression, and emergency medical services at HPS. The department employs 11 fire suppression personnel that are also trained as emergency medical technicians (Cooney, 1998). Ambulance service required for medical emergencies is provided by paramedics at San Francisco General Hospital. The department has a mutual aid agreement with the San Francisco Fire Department (SFFD).

The SFFD employs approximately 1,500 uniformed and 90 civilian personnel (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1998). When an emergency call is received, the closest station is designated the first responder. If the closest station is unable to respond, then the next closest station is called. The SFFD has three stations that can respond to calls from HPS: No. 9 on Gerald Street, No. 17 on Shafter Avenue, and No. 25 on Third Street at Islais Street (Brown, 1995).

3.11.3 Plans and Policies

The following Community Safety policies are applicable to HPS under the City of San Francisco General Plan (City and County of San Francisco, Planning Department, 1997a):

- Improve the coordination of City programs that mitigate physical hazards, help individuals and organizations prepare for and respond to disasters, and recover from the impacts of disasters (Objective 1).
- Ensure the protection of life and property from disasters through effective emergency response. Provide public education and training about earthquakes and other natural disasters and how individuals, businesses, and communities can reduce the impacts of disasters (Objective 3).

3.12 CULTURAL RESOURCES

This section presents archeological and historical background information pertinent to HPS. Brief summaries of the studies conducted by the Navy to evaluate the ethnographic, archeological, and historical conditions at HPS are presented. The ROI for cultural resources is the HPS property.

The term "cultural resources" encompasses any object, site, area, building, structure, or location that is archeologically or historically significant, or that possesses traditional cultural value (such as sites sacred to indigenous peoples or other ethnic groups). This definition includes assets considered important in the architectural, scientific, engineering, economic, agricultural, educational, social, political, military, or cultural history of California. "Prehistoric" refers to the cultural past before the advent of written records and, therefore, includes the archeological record of pre-literate cultures. For purposes of this analysis, a site is considered significant if it meets the criteria for listing in the National Register of Historic Places (NRHP) pursuant to concurrence of the State Historic Preservation Officer (SHPO) or if it meets the definition of a historical resource contained in the California Environmental Quality Act of 1970 (CEQA), Cal. Pub. Res. Code § 21084.1.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 C.F.R. 800), the Navy is consulting with the SHPO, the Advisory Council on Historic Preservation (ACHP), and the City with respect to appropriate means to avoid or mitigate potential adverse effects on NRHP-eligible properties. It is anticipated that the Navy, SHPO, ACHP, and City will enter into a memorandum of agreement (MOA) on steps that will assure an appropriate level of protection for those HPS properties appearing to qualify for listing on the NRHP. The Section 106 consultation and review process will be concluded before the NEPA ROD is approved.

3.12.1 Background

Hunters Point is a small promontory near the southeastern corner of the City, along San Francisco Bay just north of Candlestick Point. The point was named after Robert and Philip Hunter, pioneer settlers in San Francisco in the period after the United States' acquisition of California.

Ethnography

Before the arrival of Europeans in California, the Hunters Point area was inhabited primarily by a Penutian-speaking indigenous group whose territory included the areas now known as the San Francisco Peninsula, portions of the Marin County Peninsula, western Contra

Costa County, and Alameda and Santa Clara Counties. Spanish explorers gave the name “Costanoan” to this group, meaning “People of the Coast.” Modern studies typically refer to this group as the Ohlone, which is the name preferred by the group’s descendants today (U.S. Navy, 1998b).

Estimates of the Ohlone population in the Bay Area at the time of European arrival in the 1770s range from 7,000 to over 10,000. From the late 1770s to the early 1800s, the native populace was forced to abandon their villages and to integrate themselves into the Spanish mission system. By 1810, there were no longer any indigenous peoples following their traditional manner of life in the Bay Area. The number of Ohlone in the area is estimated to have fallen below 2,000 by the early 1830s, reflecting both the destruction of their way of life and the impact of diseases introduced by Europeans. Subsequent events, such as changes in the mission system in the 1820s and the boom of the Euroamerican population following the California Gold Rush in 1848, led to further declines in the Ohlone population. In 1973, the number of Ohlone descendants was estimated at slightly over 200 (U.S. Navy, 1998b).

Prehistory

Based on archeological research conducted over the last 50 years, San Francisco Bay Area human occupation could extend as far back as 8,000 B.C. (U.S. Navy, 1998b). Though the Bay Area was relatively densely populated by indigenous peoples as late as the 1770s, the following decades witnessed disruption of their traditional way of life and a drastic decline in their population, owing to the effects of European conquest, disease, and the forced “missionization” of the native population by Spanish colonizers. Much of the Bay Area’s prehistoric record has been lost because archeological sites were destroyed early on as a result of development pressure, relic collection, and non-existent or inadequate legislation to protect them.

History

The Hunters Point area was originally part of the Rincon la Salinas Y Potrero Viejo Mexican-era land grant. The property was first used as a drydock in 1867, under the auspices of the California Dry Dock Company, which built Drydock 1. Between 1901 and 1903, the San Francisco Dry Dock Company, successor to the California Dry Dock Company, built Drydock 2, just south of the original structure. After Drydock 2 was completed, the Hunters Point private drydocks began to service Navy ships. After 1916, the Navy began to subsidize the owners of the Hunters Point facility to construct larger and more efficient repair facilities to service Navy vessels (U.S. Navy, 1998b).

From 1908 to 1939, the property grew into a major shipbuilding facility. It was acquired by Union Iron Works, which was owned by Bethlehem Steel. Drydock 3 was built with Navy subsidies and used for battleship repairs. Drydock 3, which was designed to accommodate the largest vessels that could pass through the Panama Canal, was built at the site of Drydock 1, which was replaced by the new structure.

Increasing business at the shipyard spurred growth in the area's economy. During this period, several dozen small homes were built by private parties on the hillside at the northern edge of what is now HPS. At the same time, two commercial enterprises were built in the same general neighborhood. One of these, Dago Mary's restaurant, still operates today.

The Navy began efforts to acquire the shipyard in 1939. By 1942, after the United States entered World War II, the Navy had undertaken a massive construction program at HPS. Drydock 4 was constructed in 1943. The Navy shipyard remained in service until 1974, and, when required, the Navy has operated Drydock 4 since that time.

3.12.2 Cultural Resource Studies

Archeological Studies at HPS

The Navy completed an archeological inventory and assessment of HPS in February 1998 (U.S. Navy, 1998b). The purpose of the assessment was to identify and evaluate historic resources within HPS that would qualify for listing on the NRHP. This study revealed that between 1906 and 1908, Nels C. Nelson discovered eight prehistoric shellmounds in the general vicinity of Hunters Point and Islais Creek (Nelson, 1909). Four of the eight shellmounds, CA-SFr-11, -12, -13, -14, were identified within HPS boundaries (U.S. Navy, 1998b).

Historical and Architectural Studies at HPS

The Navy conducted two evaluations of historic properties at HPS: *Historical Overview of Hunters Point Annex, Treasure Island Naval Base and Description of Properties that Appear Eligible for Listing in the National Register of Historic Places* (U.S. Navy, 1988b) and *Historic Context and Inventory and Evaluation of Buildings and Structures, Hunters Point Shipyard* (U.S. Navy, 1997e). The results of the latter study are discussed below.

3.12.3 Prehistoric Resources and Archeological Sites

The precise locations of four shellmound sites recorded by Nelson (CA-SFr-11, -12, -13, -14) can only be estimated from the portion of his notebooks and sketches that have survived. Based on the information available and the subsequent historical record of earth-moving and construction activities at HPS, it seems reasonable to assume that all evidence of site CA-SFr-13 was destroyed by the extensive excavations involved in constructing Drydock 4. It is possible that intact portions

of the three other sites (CA-SFr-11, -12, -14) may still be buried beneath 20 feet (6 m) (or more) of fill. The presumed location of CA-SFr-11 is immediately adjacent to the HPS property and therefore may have experienced less impact from construction of the shipyard than the other sites. It is possible that sites CA-SFr-12 and -14, if they survived Chinese and Euroamerican historic-era occupation and subsequent shipyard construction, are deeply buried by fill.

The Navy's archeological inventory and assessment (U.S. Navy, 1998b) identified three (non-contiguous) subsurface zones of potential archeological interest for historic-era findings:

- Zone 2: May contain historical features dating from 1852 to 1903.
- Zone 3: May contain remnants of Chinese shrimp-fishing encampments.
- Zone 4: May contain historic maritime resources.

(Zone 1 refers to the locations of the four prehistoric shellmound sites discussed above.)

Based on analysis of maps dating from 1852 to 1903, Zone 2 may contain remnants of historic-era structures. No foundation remnants of these structures remain on the surface in these areas. However, there may be remains of the former boarding houses, saloons, dumps, domestic dwellings, cisterns and wells, latrines, sheds, restaurants, and detached kitchens under the fill used to create HPS. Such remains would be regarded as extremely important for social, economic, and dietary aspects of the lives of early settlers and maritime workers (U.S. Navy, 1998b).

Zone 3 identifies the sites of possible remains of Chinese shrimp-fishing camps present in the area from the early 1870s to the early 1940s. Historical maps and archival information indicate that, of the many camps in the area during this period, only five were within the present HPS site. It is possible that remnants of drying grounds, processing areas, wharves, living quarters, and storage areas may be present beneath the fill used to create the land base on which HPS was built. Remnants of these Chinese shrimp-fishing camps are considered potentially significant archeological resources.

Zone 4 pertains to remains of maritime activities from the years between 1835 and 1939. This includes not only a ship graveyard and the sites of several shipwrecks, but also remnants of wharves, docks, sea walls, and vessels that may be present beneath fill or below HPS waters. Remains could provide significant information for studies of maritime resources and ship-building technology.

In addition to these four subsurface areas of potential archeological interest, there are five shipwrecks that are known to have occurred in waters in or around the current HPS territory between 1878 and 1947. The exact location and potential historical archeological significance, if any, of these shipwrecks has not been determined (U.S. Navy, 1998b).

Four zones of archeological sensitivity have been identified within the margins of the original HPS shoreline. Historic research indicates that there is some potential for both prehistoric and historic archeology within the four identified zones; however, an archeological study confirmed that there is no physical evidence of these resources on the ground surface. If they exist at all, they would be deeply buried by the fill used to construct HPS.

3.12.4 Historic Resources and Sites

Following is a brief discussion of HPS historic resources from each historic era (U.S. Navy, 1997e).

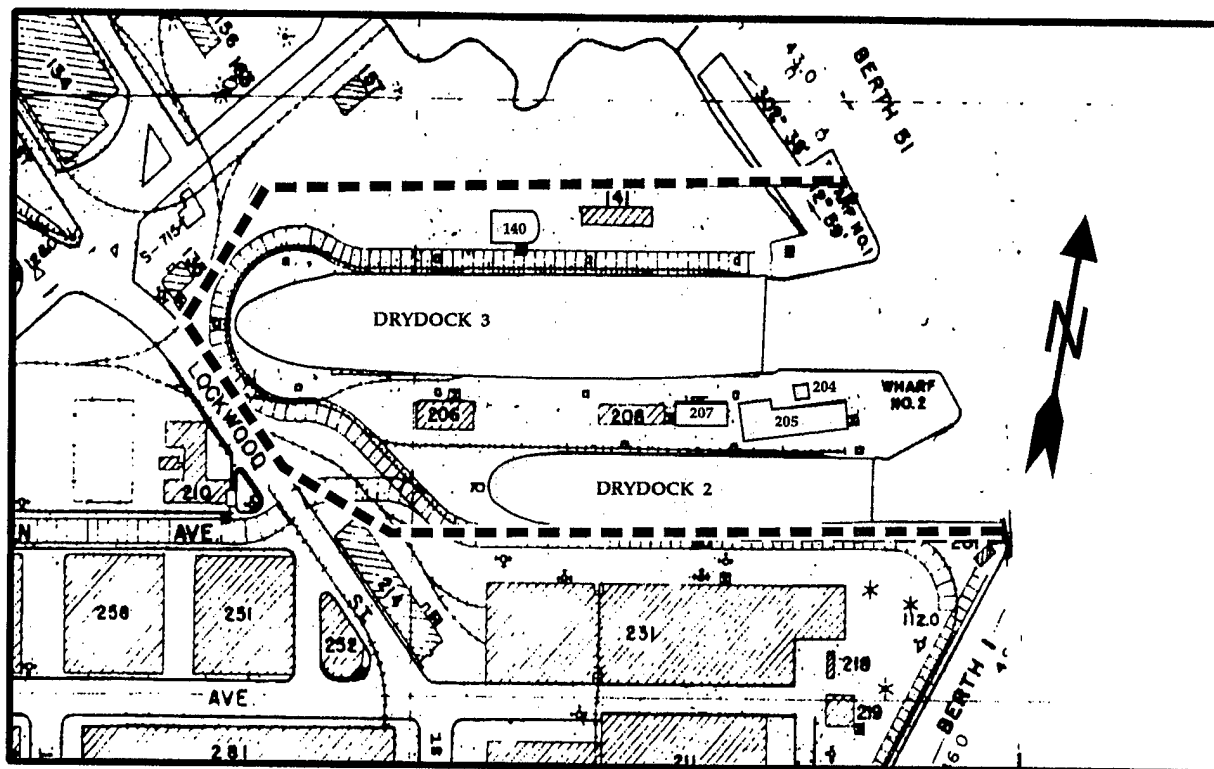
Property Types from the Early Commercial Shipyard, Pre-1908

The Hunters Point Commercial Drydock Historic District includes structures from the period before 1908, as well as buildings and structures from the later period between 1908 and 1939. Figure 3.12-1 identifies the boundaries of this historic district and its contributing buildings.

The Hunters Point Commercial Drydock Historic District is eligible for listing in the NRHP. The early buildings and structures, particularly Drydocks 2 and 3 and Buildings 204 and 205, are largely intact. The drydocks are no longer operable; with their caissons removed, the drydocks are now essentially berths. Buildings 204 and 205 have been boarded over to prevent vandalism, but most of the window frames appear to be intact. The buildings are significant, not only for their association with the site's history, but also for their design. These rectangular brick buildings are designed as if they were small Classical temples, with pedimented roof forms and arched window and door openings. The seawall and wharves associated with these docks have deteriorated and no longer retain their integrity. There are no visible remnants of Drydock 1 at the site, although some remains may be buried beneath the fill.

Mature Commercial Ship Repair at HPS, 1908-1939

Three types of buildings and structures remain from this period: drydocks and related buildings at the waterfront, single family housing units on the hillside, and two commercial buildings built by private parties. The most substantial remnants from this period are at the historic drydock area and comprise the remaining buildings within the historic district that were built after 1908. These include Drydock 3, built between 1916 and 1918, the pumphouse for



LEGEND

- Hunters Point Commercial Drydock Historic District Boundary
- Contributing Structures

Source: City and County of San Francisco, 1993b.

Figure 3.12-1: Hunters Point Commercial Drydock Historic District

Drydock 3 (Building 140), and the Paint and Tool Building (Building 207).

The 1908-1939 buildings along the waterfront are generally consistent with pre-1908 construction there, matching the earlier buildings in materials and architectural detail. The 1908-1939 drydock-related buildings and structures are treated as contributing elements of the historic district.

Single family residences and commercial buildings make up the remaining structures at HPS from this era. By letter of May 29, 1998, the SHPO concurred with the Navy's determination that they do not meet the criteria for listing in the NRHP.

Naval Shipyard Hunters Point During World War II, 1939-1945

The World War II-era buildings and structures at HPS fall into 10 property types: shops and warehouses; barracks; administrative buildings; social welfare buildings; single-family residences; toilets; drydocks; cafeterias; utility buildings (substations and pumphouses); and miscellaneous other buildings. It appears that nearly all of the buildings and structures at HPS were built from Bureau of Yards and Docks standardized plans. The only structure from the World War II era identified as historically significant and eligible for inclusion on the NRHP is Drydock 4, built in 1943. This drydock is 1,092 feet (332 m) long, 143 feet (44 m) wide, and 53 feet (16 m) deep. Drydock 4 retains a high degree of integrity. It is functional and is currently being leased and operated for ship salvage.

Naval Shipyard at Hunters Point, Post-1945

Construction at the shipyard continued until 1948. After 1948, relatively few buildings were constructed with any direct association with the shipyard function.

During the immediate post-war period, the shipyards were filled out with buildings that had been planned during the war but not completed before the war's end in 1945. Structurally, these buildings fall into two property types: (1) buildings constructed along the lines of wartime plans, and (2) buildings that did not follow wartime plans. The shipyard includes a few buildings that were built between 1945 and 1947 that are identical to their counterparts from between 1942 and 1945. More commonly, the immediate post-war buildings were "pre-engineered" (Butler type) buildings, a trend that persisted through the 1970s. Even the large shipyard buildings from the 1970s are pre-engineered structures.

Post-World War II-era structures at HPS fall into the following four property types: big shipyard buildings, metal-sided Butler Buildings,

other building types continuing the World War II-era construction program, and miscellaneous buildings from 1947, including the 450-ton (408-metric ton) Bridge Crane.

None of the buildings and structures constructed at HPS from the Post-War era to the present qualify for listing on the NRHP (U.S. Navy, 1997e). By letter of May 29, 1998, the SHPO concurred in this determination.

3.12.5 Significant Historic Architectural Resources

In May 1998, the SHPO concurred with the Navy's determination that one HPS structure, Drydock 4, is individually eligible for inclusion on the NRHP (SHPO, 1998) (Figure 3.12-2). The SHPO further concurred with the Navy's determination that six other structures are eligible for inclusion on the NRHP as contributors to the Hunters Point Commercial Drydock Historic District, as shown on Figures 3.12-3, 3.12-4, and 3.12-5 (SHPO, 1998):

- Drydock 2
- Drydock 3
- Gatehouse (Building 204)
- Pumphouse 2 (Building 205)
- Pumphouse 3 (Building 140)
- Tool and Paint Building/Toilet (Building 207)

The SHPO also concurred that the following structures within the boundaries of the Hunters Point Commercial Drydock Historic District are not eligible for inclusion on the NRHP, and therefore are non-contributors to the historic district (SHPO, 1998):

- Tool Room and Shop Service Building (Building 208)
- Shop Building (Building 141)
- Seawall and wharves
- Remnants of Drydock 1

The Navy concluded that Dago Mary's restaurant does not appear to qualify for listing on the NRHP because it lacks significance in terms of its place in community development and its design (U.S. Navy, 1997e). The Navy also concluded that the 450-ton (408-metric ton) Bridge Crane does not meet the criteria for listing on the NRHP because, in about 1970, the traveling cranes were removed, leaving only the basic bridge structure, which has been modified since that time. The SHPO concurred with the Navy's determination for these two properties and concluded that there are no other properties outside the boundaries of the historic district and Drydock 4 that qualify for inclusion on the NRHP (SHPO, 1998).

When the Navy was directed to close and dispose of Mare Island Naval Shipyard (Vallejo, California) in 1993, that shipyard operated

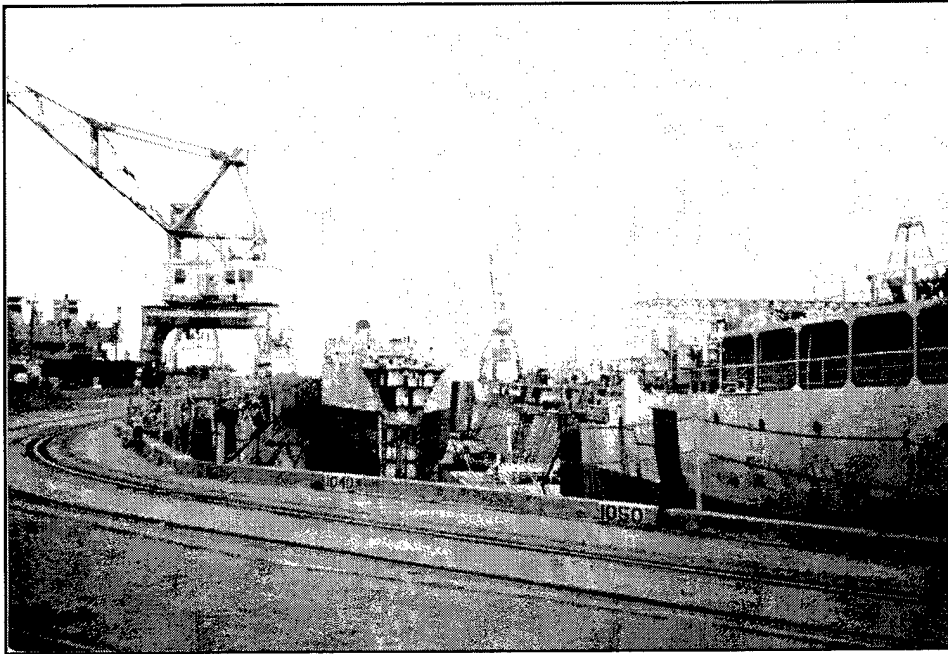
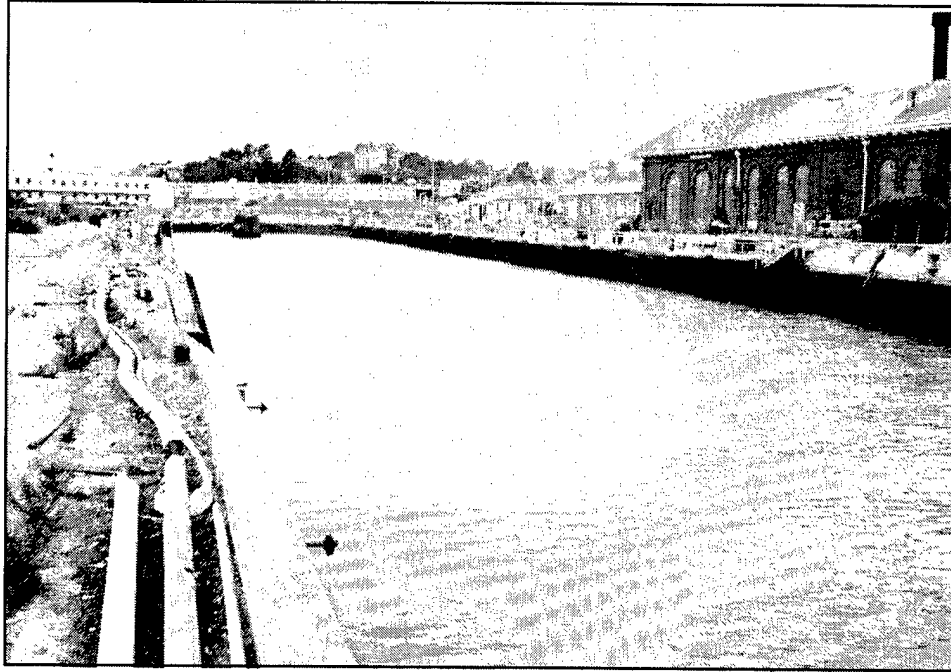
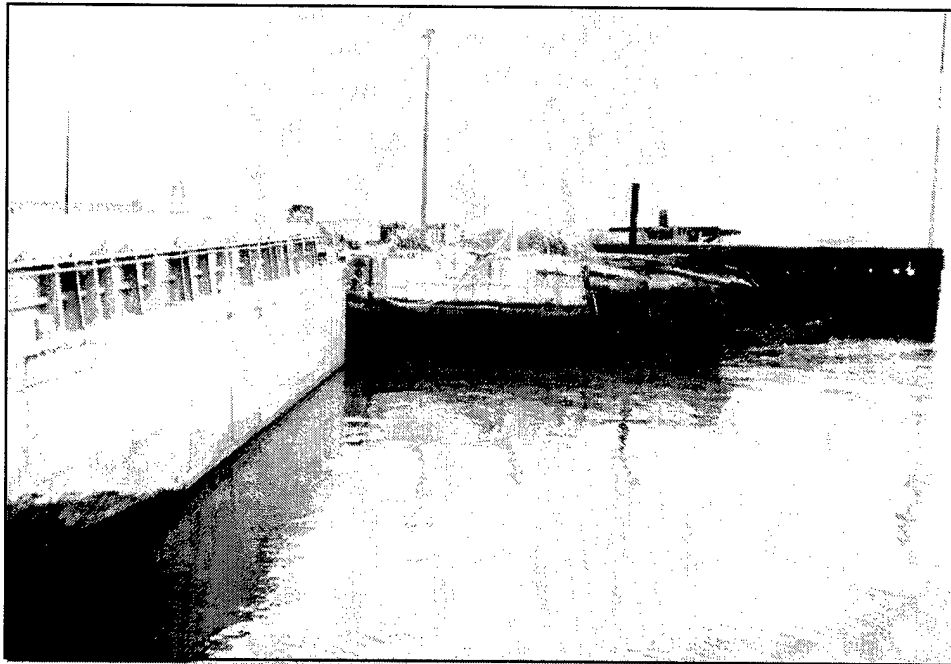


Figure 3.12-2: Drydock 4

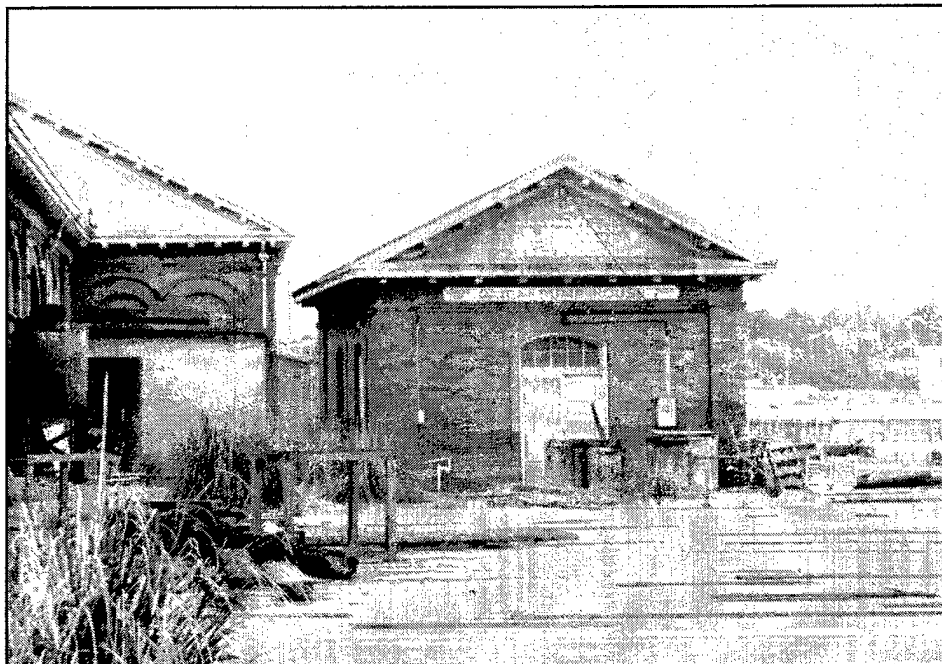


Drydock 2

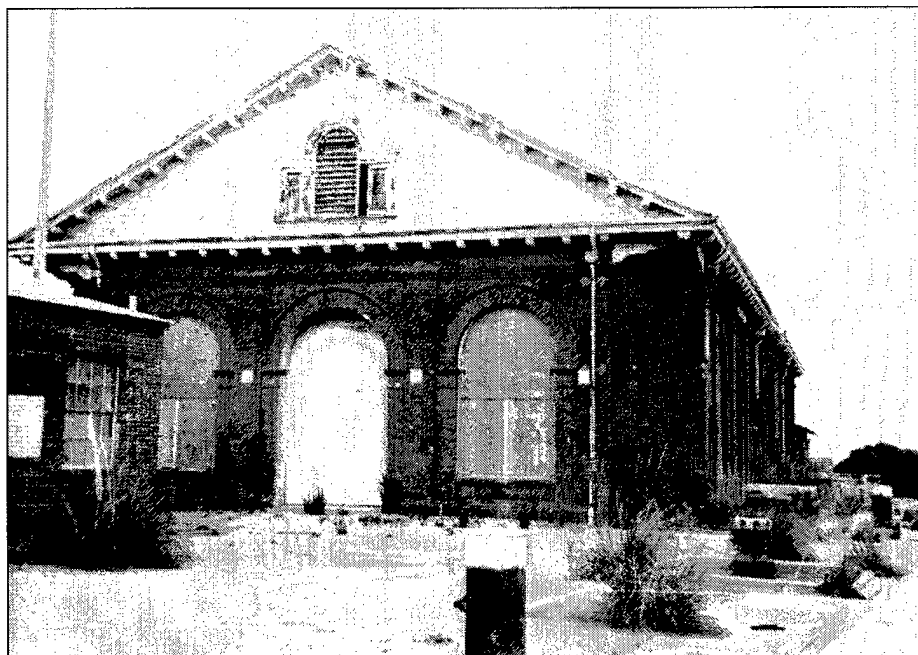


Drydock 3

Figure 3.12-3: Drydock 2 and Drydock 3



Gatehouse (Building 204)



Pumphouse (Building 205)

Figure 3.12-4: Gatehouse (Building 204) and Pumphouse (Building 205)



Pumphouse 3 (Building 140)



Tool and Paint Building (Building 207)

Drydock 4 at HPS. Operation of Drydock 4 ceased immediately, and plans were made to layaway the drydock. However, the layaway cost could not be justified for a facility the Navy had been directed to close and convey from Federal jurisdiction. At that time, the Navy requested comments of the ACHP pursuant to Section 106 of the NHPA, because Drydock 4 had been determined eligible for listing on the National Register. In accordance with the regulations (36 C.F.R. Part 800) implementing Section 106, a MOA was developed by the Navy in consultation with the SHPO and was accepted by the ACHP in August 1994. That MOA accepted the loss of Drydock 4, with the Navy agreeing to attempt to lease the facility for the short term and to record the structure for inclusion in the Historic American Engineering Record (HAER). Drydock 4 is currently under lease to Astoria Metals. The National Park Service accepted the HAER documentation in November 1996.

3.12.6 Plans and Policies

Federal historic preservation laws and regulations concerning treatment of historic resources on Federal properties include the NHPA, 16 U.S.C. § 470, as amended, and the regulations for Protection of Historic Properties (36 C.F.R. 800) implementing Section 106 of NHPA. Additional responsibilities are placed on the activity commander or commanding officer pursuant to cultural resources requirements of the DOD and the Department of the Navy (DOD Directive 4710.1 of 21 June 1984, Archeological and Historic Resources Management; Department of the Navy OPNAVINST 5090.1B, Historic and Archeological Resources Protection, 1 November 1994, Chapter 23, as amended by Change 1).

Two other Federal laws that pertain to cultural resources are the Archeological Resources Protection Act of 1979, 16 U.S.C. § 470aa-11, and the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, 25 U.S.C. § 3001 *et seq.* The Archeological Resources Protection Act of 1979 requires that permits be issued to excavate any archeological resources on Indian tribal or Federal lands.

NAGPRA requires Federal agencies and museums receiving Federal funds to inventory and repatriate human remains, associated and unassociated funerary objects, and items of cultural patrimony collected on Indian or Federal land. These items must be returned, upon request, to lineal descendants or to Indian tribes with the closest cultural affiliation. If such burial remains are discovered in the future at HPS, they are subject to protection and handling requirements listed in NAGPRA, Pub. L. 101-601 § 3(d)(1).

State Laws

The principal state law relating to preservation of historical and archeological properties is CEQA, Cal. Pub. Res. Code § 21000 *et seq.*

CEQA Appendices G and K suggest that significant effects on cultural resources be determined during the project planning stage. Under this law, cultural resources include both prehistoric and historic archeological sites, as well as paleontological resources or properties of historic, cultural, or architectural significance to a community, ethnic group, or social group.

The California Register Act of 1992, Pub. Res. Code §§ 5020, 21083, and 21084, provides specific guidance for the protection of archeological resources. The California Register of Historical Resources is a listing of significant historical resources in the state, similar to the NRHP at the national level. NRHP-listed or eligible properties are automatically listed in the California Register. Pub. Res. Code § 21084.1 provides instructions on the treatment under CEQA of projects that may result in a “substantial adverse change” to historic properties. Generally, a project that will have a “substantial adverse change” upon a California Register property is regarded as having the potential for a significant effect on the environment.

3.13 BIOLOGICAL RESOURCES

This section describes the vegetation, wildlife, sensitive species, and sensitive habitats in the ROI, which includes HPS and areas within half a mile (0.8 km) of the facility, including Yosemite Slough, Candlestick Point State Recreation Area, Bayview Park, and Pier 98.

3.13.1 Background Data/Information

The Navy conducted field surveys of HPS in 1995 and 1996 (U.S. Navy, 1995c and 1996c). Other studies and sources of information on biological resources and sensitive species within the ROI include the California Natural Diversity Data Base (CNDDB) (California Department of Fish and Game, 1995), the Homeporting EIS for Hunters Point (U.S. Navy, 1986), the *Hunters Point Shipyard Land Use Plan; Existing Conditions Report* (City and County of San Francisco, Planning Department and San Francisco Redevelopment Agency, 1994), a list of sensitive species from the U.S. Fish and Wildlife Service (USFWS) (USFWS, 1994a; USFWS, 1996), and a list of species observed at HPS.

3.13.2 Vegetative Communities

HPS is predominantly developed and industrial, characterized by extensive paved areas, disturbed open space areas, and landscaping. No areas of undisturbed vegetation are present within HPS. The disturbed open space includes areas once paved or used as storage or disposal sites. Landscaped vegetation includes lawns and nonnative planted trees and shrubs. Upland areas are dominated by nonnative species, including sand verberna (*Ambronina maritima*), sea rocket (*Cakile edentata*), and yellow star-thistle (*Centuarea solstitialis*).

There are 6 areas of wetlands, comprising a total area of 10 acres (4 ha) (U.S. Navy, 1992). Pickleweed (*Salicornia virginica*) and saltgrass (*Distichlis spicata*) dominate the vegetation in these areas. Wetlands and aquatic habitats are the only native habitats, and these have been extensively disturbed by human activities at the facility (U.S. Navy, 1995c). A list of plant species found at HPS is provided in Appendix B, Table B-36.

Vegetation on other lands within the ROI is similar to that found at HPS. Most of the land within the ROI is developed, dominated by residential and industrial uses. Vegetation on these lands tends to be nonnative species commonly used for landscaping and weedy species. The coastline north and south of HPS, including Pier 98, Candlestick Point State Recreation Area, and Yosemite Slough, is disturbed open space, dominated by nonnative species. Vegetated areas at Pier 98 include approximately 10 acres (4 ha) of potential wetlands habitat and about 15 acres (6 ha) of upland open space. Plant species at Pier 98 include pickleweed, saltgrass, Italian ryegrass (*Lolium multiflorum*),

dodder (*Cuscuta* sp.), and wild oats (*Avena barbata* and *A. fatua*) (U.S. Navy, 1995c). The Candlestick Point State Recreation Area is disturbed by human activity and supports mostly nonnative landscaped vegetation, including nonnative pines (*Pinus* sp.), oaks (*Quercus* sp.), and bermuda grass (*Cynodon dactylon*). Yosemite Slough also is disturbed by human activity, with notable vegetation species being pickleweed, saltgrass, and nonnative shrubs.

The only other large area of open space within the ROI is Bayview Park, between U.S. 101 and 3Com Park. The vegetation at Bayview Park is disturbed but has been protected by restricted access and is less disturbed than many areas in the region. Predominant plant species at Bayview Park include blue gum (*Eucalyptus globulus*) and broom (*Genista monspessulana*), both nonnative species (U.S. Navy, 1995c).

3.13.3 Fish and Wildlife

Wildlife at HPS is typical of that found in local coastal urban areas that are dominated by weedy, nonnative vegetation. Species types include birds, mammals, reptiles, and marine invertebrates and fish. This section identifies the species that have been observed at HPS.

The wetlands, mudflats, and aquatic areas provide foraging and resting opportunities and nesting and breeding habitat for waterfowl and shorebirds. Examples of birds common to these habitats are the lesser scaup (*Aythya affinis*), killdeer (*Charadrius vociferus*), tricolored blackbird (*Agelaius tricolor*), least sandpiper (*Calidris minutilla*), double-crested cormorant (*Phalacrocorax auritus*), long-billed curlew (*Numenius americanus*), herring gull (*Larus argentatus*), and glaucous-winged gull (*Larus glaucescens*). Upland areas provide habitat for songbirds, such as the house finch (*Carpodacus mexicanus*) and red-winged blackbird (*Agelaius phoeniceus*), and introduced species, such as the house sparrow (*Passer domesticus*) and European starling (*Sturnus vulgaris*). A detailed list of waterfowl, shorebirds, and upland avian species observed at HPS is provided in Appendix B, Table B-37.

The same species of waterfowl and shorebirds at HPS are expected to inhabit other shoreline areas within the ROI, including Yosemite Slough, Candlestick Point State Recreation Area, and Pier 98. During a 1995 survey at Pier 98, the following species were observed, most of which have also been observed at HPS: the greater scaup (*A. marila*), lesser scaup, double-crested cormorant, American avocet (*Recurvirostra americana*), killdeer, whimbrel (*Numenius phaeocephus*), spotted sandpiper (*Actitis macularia*), willet (*Catoptrophorus semipalmatus*), Forster's tern (*Sterna forsteri*), and red-winged blackbird (*A. phoeniceus*) (U.S. Navy, 1995c). Likewise, the inland areas within the ROI support the same upland avian species as noted for HPS. A survey at Bayview Park noted the house finch, American crow (*Corvus brachyrhynchos*),

mourning dove (*Zenaida macroura*), rock dove (*Columba livia*), and house sparrow (U.S. Navy, 1995c).

Mammals at HPS and within the ROI include domestic cats and dogs, California ground squirrels (*Otospermophilus beecheyi*), black-tailed hares (*Lepus californicus*), and house mice (*Mus musculus*). Reptile species include the western fence lizard (*Sceloporus occidentalis*) and gopher snake (*Pituophis melanoleucus*). Appendix B, Table B-38, lists mammal and reptile species that could inhabit the ROI. Most of these species are common in California.

During trawl sampling conducted by the California Department of Fish and Game (CDFG) between 1980 and 1985 off the shoreline of the ROI, approximately 50 fish species were recorded. Common species included the northern anchovy (*Engraulis mordax*), Pacific herring (*Clupea pallasii*), topsmelt (*Atherinops affinis*), jacksmelt (*Atherinopsis californiensis*), and yellowfin goby (*Acanthogobius flaimanus*) (U.S. Navy, 1987).

3.13.4 Sensitive Species

No sensitive species are known to inhabit HPS. Sensitive bird species may pass through or occasionally forage at the site. Included as sensitive species are those species of special concern to the CDFG. Endangered, threatened, and sensitive species known to occur at HPS or within half a mile (0.8 km) radius are listed in Table 3.13-1.

In 1996, the Navy surveyed HPS for the presence of the Federally protected mission blue butterfly (*Icaricia icariodes missionensis*). No individuals of the endangered butterfly or its requisite larval food plants were observed during the survey. Due to the absence of its larval food plants, the mission blue butterfly is not expected to occur at HPS (U.S. Navy, 1996c).

Those sensitive species that may forage or pass through HPS are discussed below.

Plants

No sensitive plant species are known to occur within the ROI, due to the disturbed nature of the area and lack of suitable habitat. No sensitive plant species were observed during a 1995 rare plant survey (U.S. Navy, 1995c).

Animals

No sensitive animal species are known to inhabit HPS due to the small amount of undisturbed habitat. Several sensitive avian species, as described below, may occasionally forage at HPS, but none are known to nest there.

**TABLE 3.13-1:
ENDANGERED, THREATENED, AND SENSITIVE SPECIES
POTENTIALLY INHABITING HPS**

FOUND AT HPS	COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	STATE STATUS
Plants				
	None			
Invertebrates				
	None			
Fish (off-shore of HPS)				
O	winter-run Chinook salmon	<i>Oncorhynchus tshawytscha</i>	E	E
P	steelhead (Central Calf. Coast)	<i>O. hynchus mykiss</i>	T	none
P	steelhead (Central Valley)	<i>O. hynchus mykiss</i>	PE	none
O	longfin smelt	<i>Spirinchus thaleichthys</i>	SC	CSC
Amphibians and Reptiles				
	None			
Birds				
O	western snowy plover (breeding)	<i>Charadrius alexandrinus nivosus</i>	T	CSC
O	Peregrine falcon*	<i>Falco peregrinus anatum</i>	E	E
O	California black rail	<i>Laterallus jamaicensis</i>	SC	T
P	California brown pelican*	<i>Pelecanus occidentalis californicus</i>	E	E
O	California clapper rail	<i>Rallus longirostris obsoletus</i>	E	E
O	California least tern*	<i>Sterna antillarum browni</i>	E	E
O	Swainson's hawk*	<i>Buteo swainsoni</i>	none	T
P	Clark's grebe*	<i>Aechmophorus clarkii</i>	none	CSC
P	western grebe*	<i>A. occidentalis</i>	none	CSC
O	tri-colored blackbird*	<i>Agelaius tricolor</i>	SC	CSC
P	burrowing owl (burrow sites)	<i>Athene cunicularia</i>	SC	CSC
O	Barrow's goldeneye*	<i>Bucephala islandica</i>	none	CSC
P	common loon*	<i>Gavia immer</i>	none	CSC
P	sharp-shinned hawk*	<i>Accipiter striatus</i>	none	CSC
P	loggerhead shrike*	<i>Lanius ludovicianus</i>	none	CSC
P	California gull*	<i>Larus californicus</i>	none	CSC
O	Alameda song sparrow	<i>Melospiza melodia pusillula</i>	SC	CSC
O	long-billed curlew*	<i>Numenius americanus</i>	none	CSC
O	double-crested cormorant*	<i>Phalacrocorax auritus</i>	none	CSC
Mammals				
P	greater western mastiff bat	<i>Eumops perotis californicus</i>	SC	CSC
P	Townsend's big-eared bat	<i>Plecotus townsendii townsendii</i>	SC	CSC

Sources: CDFG, 1994a, 1994b, 1994c, 1995; USFWS, 1994a, 1994b, 1994c, 1995, 1996; U.S. Navy, 1986, 1995c, 1996c.

Notes: *This species has been observed at HPS in past surveys or by local residents (see Appendix B, Table B-37).

Found at HPS

O = Occasional (foraging or transitory)
P = Possible Federal Status
E = Endangered
T = Threatened
PE = Proposed Endangered
C = Candidate (formerly Category 1 Candidate)
SC = Species of Concern (formerly Category 2 Candidate)

State Status

E = Endangered
T = Threatened
R = Rare
CSC = California Species of Special Concern

Peregrine falcons (*Falco peregrinus anatum*) have been observed foraging at HPS (U.S. Navy, 1994b). Open ledges, caves, cliffs, and human-made structures provide peregrines with suitable nesting sites. The birds prefer perches that overlook coastal waters, rivers, or lakes. This species feeds mainly on smaller birds and may occasionally use HPS for foraging. The closest known peregrine falcon nest is on the San Francisco-Oakland Bay Bridge, approximately 5 miles (8 km) from HPS.

The western snowy plover (*Charadrius alexandrinus nivosus*) is not known to inhabit or nest at HPS or elsewhere in the ROI because of the lack of undisturbed beach habitat. It may occasionally visit the small wetlands at HPS and Pier 98, as well as Yosemite Slough for foraging. This species nests on beaches along the Pacific Coast and has been observed at Bay Farm Island, to the east of HPS near Oakland.

The California clapper rail (*Rallus longirostris obsoletus*) and California black rail (*Laterallus jamaicensis*) may occasionally forage in the wetlands at HPS, as well as at Pier 98 and Yosemite Slough. The clapper rail historically bred along the Pacific Coast from Humboldt County to San Luis Obispo County, and the black rail historically bred from Marin County to San Diego County.

Brown pelicans may forage in the offshore areas adjacent to HPS and the ROI shoreline, but they do not nest within the ROI. The brown pelican (*Pelecanus occidentalis californicus*) has historically bred along most of the Pacific Coast but now breeds only on islands off the coast of southern California.

California least terns (*Sterna antillarum browni*) may pass through and forage at HPS during their migration between southern California and northern California nest sites. Small beach areas at HPS may occasionally provide foraging and roosting areas for the California least tern. This species tends to nest in large colonies, the most notable of which in the Bay Area is at Naval Air Station Alameda, approximately 10 miles (16 km) to the east across San Francisco Bay.

Swainson's hawk (*Buteo swainsoni*) may transit and forage at HPS but is not known to nest in the ROI. Gophers and rats are the preferred diet of the Swainson's hawk, making large undisturbed upland fields its preferred habitat.

Stray Chinook salmon (*Onchorhynchus tshawytscha*) and stray steelhead trout (*Oncorhynchus mykiss*) may infrequently transit the waters offshore during migration periods; however, there is no critical habitat for these species at HPS or in the waters offshore of the ROI. Both of these species reach their freshwater spawning grounds through the

Sacramento River Delta, which drains into San Francisco Bay approximately 15 miles (24 km) north of HPS. The most direct migration route for spawning adults and sea-bound juveniles is to track north of Alcatraz Island and north of the Bay Bridge, which is about 5 miles (8 km) north of HPS. The population decline of the Federally protected winter-run Chinook salmon is due to modifications and loss of spawning and rearing habitat in the upper Sacramento River system. Likewise, habitat destruction along coastal streams and within the San Joaquin watershed has degraded habitat for the Central Valley and Central California Coast steelhead species.

Nonlisted Sensitive Animal Species at HPS

Nonlisted species are those not listed as endangered or threatened by the USFWS or CDFG but that are considered to be species of special concern by the CDFG. Several nonlisted sensitive animal species, included in Table 3.13-1, have been observed at HPS but are not known to inhabit or nest at the site, due to lack of suitable habitat. Also included in Table 3.13-1 are nonlisted sensitive species that might pass through or forage at HPS but that have not been observed.

3.13.5 Sensitive Habitats

Six small, unconnected wetlands have been delineated at HPS (U.S. Navy, 1992), occupying less than 10 acres (4 ha). Figure 3.13-1 identifies these wetlands, as well as the upper boundary between wetland and aquatic habitats. The dominant vegetation is pickleweed and saltgrass. The wetlands provide habitat for common waterfowl and shorebirds, such as those previously described. Mudflats are also present along the undeveloped southern and northern coastlines of the property. These habitats provide foraging opportunities for a variety of avian and aquatic species.

North of HPS, there are approximately 10 acres (4 ha) of mudflats and tidal salt marsh at Pier 98. The City is planning to restore these areas to tidal wetland habitat. Yosemite Slough also maintains tidal wetland habitat functions and values. These areas provide foraging opportunities for avian and aquatic species.

3.13.6 Plans and Policies

Federal Requirements

Federal Endangered Species Act

The Federal Endangered Species Act (ESA), 16 U.S.C. § 1531 *et seq.*, directs that all Federal agencies and departments use their authority to conserve endangered and threatened species. Section 7 of the ESA for Federal actions requires a Federal agency to consult with USFWS (or National Marine Fisheries Service for some species) before undertaking actions that could affect endangered and threatened species.

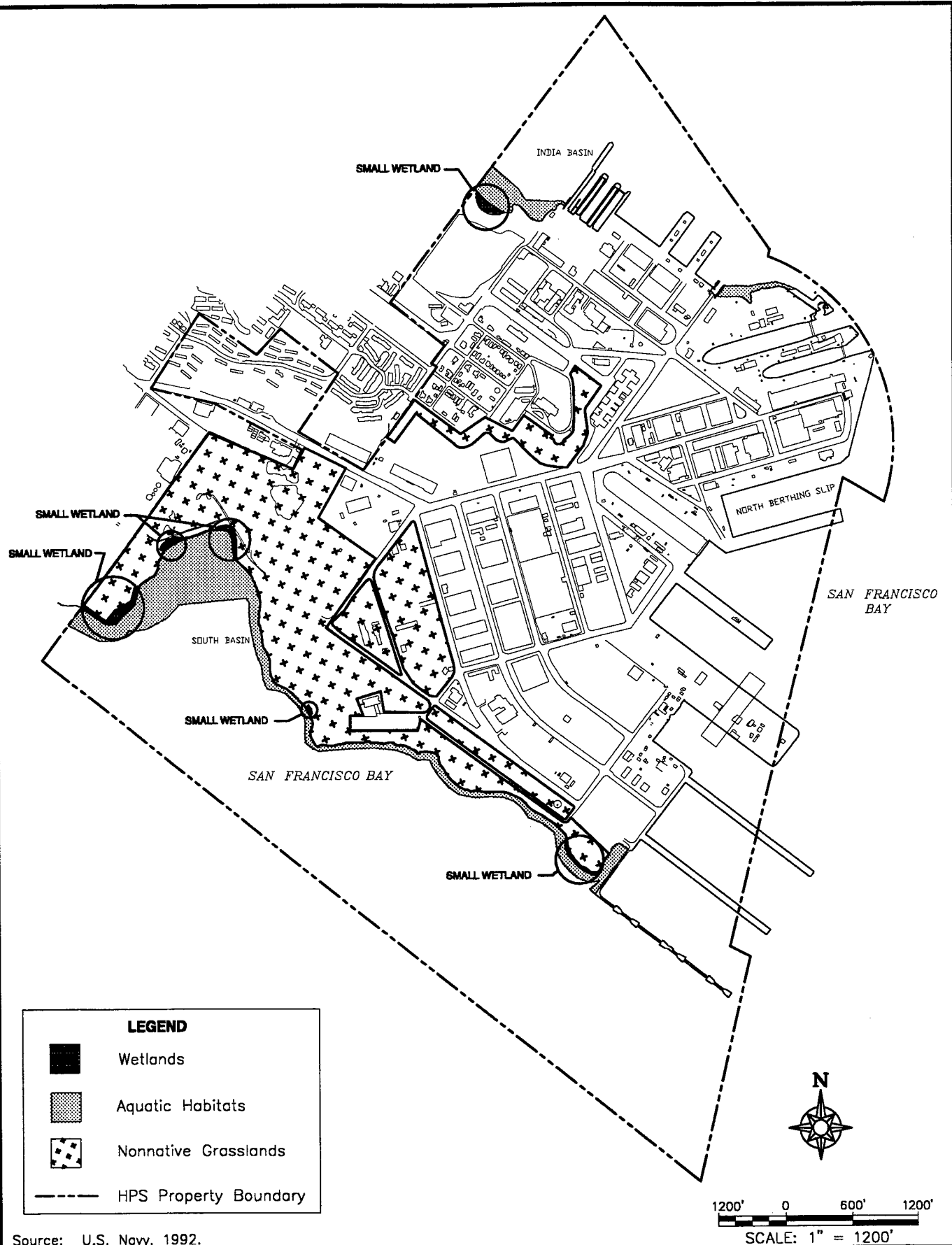


Figure 3.13-1: Wetlands and Aquatic Habitats, Hunters Points Shipyard

Federal agencies are prohibited from activities that USFWS determines could jeopardize the continued existence of these species.

In addition, the ESA requires that USFWS issue a permit prior to actions that would result in the killing, harming, or harassing of an endangered or threatened species. A similar process under Section 10a of the ESA is required for state and local agencies, as well as for individuals.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act of 1972, 16 U.S.C. § 703, prohibits the taking of individuals, nests, or eggs of a migratory bird species.

Migratory birds, such as swallows and terns, nest and pass through the ROI during the spring and fall.

Clean Water Act

The U.S. Army Corps of Engineers (COE) regulates impacts to wetlands under Section 404 of the Clean Water Act (CWA), 33 U.S.C. § 1251. Wetlands are considered important to the public interest in that they perform significant biological functions, such as providing nesting, breeding, foraging, and spawning habitat for a wide variety of resident and migratory animal species (U.S. Army Corps of Engineers Regulatory Program Regulations, 33 C.F.R. § 320.4).

Wetland Regulations

Executive Order 11990 requires that Federal agencies, to the extent permitted by law, avoid construction in wetlands unless no practicable alternative to the construction exists and that all practicable measures to minimize harm to wetlands, including opportunities for public review of plans or proposals, be provided. It further requires that any disposal to non-Federal public or private parties of properties containing wetlands reference in the conveyance uses that are restricted under identified Federal, state, or local wetland regulations.

State Requirements

California Endangered Species Act

California has procedures similar to the Federal ESA for non-Federal projects under the California Endangered Species Act, California Fish and Game Code § 2090 *et. seq.* The CDFG can adopt a Federal biological opinion as a state biological opinion under California Fish and Game Code § 2095. Upon Navy disposal, HPS reuse would be subject to these state regulations.

Projects that include potential dredge or fill impacts to wetlands must be reviewed by the COE and U.S. EPA under the CWA. Certain

activities in wetlands are automatically authorized or granted a general permit, allowing wetlands to be filled where impacts resulting from a single and complete project do not exceed 1 acre (0.4 ha). The COE assumes discretionary jurisdiction over proposed impacts of between 1 and 10 acres (0.4 to 4 ha).

CDFG Wetlands Policies

The CDFG has the authority to reach an agreement with an individual proposing to affect intermittent or permanent streams and other wetlands pursuant to Section 1603 of the California Fish and Game Code. The CDFG generally evaluates the information gathered during preparation of the environmental assessment document and attempts to satisfy its concerns during the CEQA process. In accordance with its policy of "no net loss" of wetland habitat, the CDFG requires completion of a streambed alteration agreement for actions that affect streams and wetlands. This agreement is made between a project proponent and the CDFG to minimize adverse effects on streams and wetlands. The reuse of HPS comes under CDFG authority regarding development that could affect existing wetlands.

3.14 ENERGY

This section describes existing energy consumption at HPS, pursuant to the requirements of CEQA. The ROI for energy consumption is HPS.

3.14.1 Energy Consumption

PG&E currently provides natural gas and electric service to HPS from the Hunters Point Power Plant. The City and PG&E have reached an agreement to shut down this plant as soon as the facility is no longer needed to sustain electric reliability in San Francisco. The City and PG&E have also agreed to jointly advocate the expeditious development of replacement capacity. A variety of options for replacement capacity, including additional generation and transmission upgrades, will likely be the subject of in-depth investigations. The City proposes to acquire the Potrero Power Plant near Pier 80.

Annual energy consumption at HPS is 9.6 million kilowatts (kW) of electricity (California Energy Commission, 1996). Vehicular traffic at HPS is estimated to consume approximately 102,800 barrels (16,342,116 liters) of crude oil per year. The total energy consumption (electricity and vehicular fuel) is the equivalent of approximately 109,035 barrels (17,333,294 liters) of crude oil per year.

3.14.2 Plans and Policies

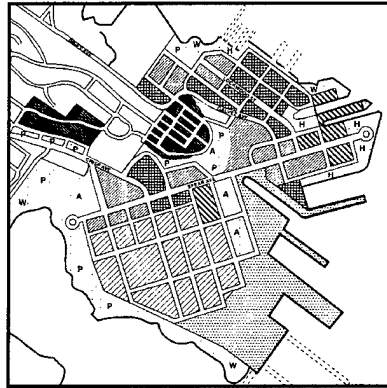
Energy Efficiency Standards

Energy consumption of new buildings in California is regulated by the state's energy efficiency standards embodied in 24 C.C.R. §§ 100-152 (1995). These efficiency standards apply to both residential and nonresidential building construction and regulate energy consumed for heating, cooling, ventilation, water heating, and lighting.

California Energy Plan

The *California Energy Plan* is the state's principal energy planning and policy document. According to this document, which recognizes connections between energy use and air pollution, approximately 80 percent of the state's air pollution is caused by burning fossil fuels. The plan finds that increasing energy efficiency is the lowest cost alternative for improving air quality (City and County of San Francisco Planning Department, 1996).

4 Environmental Consequences



CHAPTER 4: ENVIRONMENTAL CONSEQUENCES
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4. ENVIRONMENTAL CONSEQUENCES

This chapter describes the potential environmental consequences associated with the Navy's disposal and the City and County of San Francisco's (City's) reuse of Hunters Point Shipyard (HPS). The disposal action would convey the facility out of Navy ownership. The conveyance could occur as a total transfer of title, a phased transfer by deed in conjunction with a Lease in Furtherance of Conveyance (LIFOC), or a § 334 early transfer. The City's reuse would result in adaptive reuse of some existing structures and facilities, as well as new construction. The Proposed Reuse Plan identifies general categories and densities of land uses that would be allowed. Impacts are described at a general level of detail, consistent with the level of detail in the Proposed Reuse Plan. Given the programmatic nature of this discussion, future site-specific infrastructure and development proposals may require additional environmental analysis under the California Environmental Quality Act (CEQA) if the nature and magnitude of impacts differs from those described in this document.

Under the City's Proposed Reuse Plan and the Reduced Development Alternative, impacts are considered for two phases of development: partial build-out at 2010 and full build-out at 2025. Reuse impacts are also considered in light of possible Navy disposal options. Some resource sections address cumulative impacts by considering proposed reuse in conjunction with future growth forecast for the City. Potential cumulative impacts are also discussed in Section 5.4.

For the purposes of analysis under the National Environmental Policy Act (NEPA), direct environmental consequences or impacts are those associated with Navy disposal and the No Action Alternative, and indirect impacts are those associated with community reuse of Navy property. The Navy's responsibility for disclosing indirect reuse-related environmental impacts is to address reasonably foreseeable impacts.

The following sections identify potential significant impacts of Navy disposal and community reuse alternatives on the resource areas. For each potential significant impact discussed, a determination has been made whether it would be a significant or not significant impact to the environment. Mitigation measures are identified for significant impacts, if feasible.

4.1 TRANSPORTATION, TRAFFIC, AND CIRCULATION

This section describes the potential impact of Navy disposal and community reuse on the transportation network serving HPS. The region of influence (ROI) for the transportation, traffic, and circulation analysis includes regional and local access routes and the street system of HPS. The HPS project area also encompasses public transit modes:

rail, light rail, and bus services that would potentially serve HPS, bicycle routes to and through the HPS project area, and crosswalks in the HPS project area serving large numbers of pedestrians.

Future potential transportation, traffic, and circulation impacts would be significant if an alternative would result in any of the following:

- Increased traffic at intersections causing the Level of Service (LOS) to deteriorate to LOS E or F.
- Increased demand on public transportation (transit) exceeding anticipated capacity.
- Increased traffic along freeway segments causing the volume-to-capacity (v/c) ratio to exceed 1.0.

Impacts are projected to 2010 and 2025 and incorporate projected background traffic levels assuming completion of other projects in the HPS project area and overall regional growth. Environmental analyses for three additional projects in the HPS project area have been completed or are in progress. These projects include the Mission Bay Subsequent Environmental Impact Report (EIR), Third Street Light Rail Transit (LRT) Extension Project Environmental Impact Statement (EIS)/EIR, and the Candlestick Point Stadium and Retail/Entertainment Center EIR. A technical memorandum on cumulative transportation impacts, comparing assumptions, methodologies, and conclusions of these recent/ongoing analyses, is in Appendix B (Korve, 1998). This comparison found the assumptions, methodologies, and levels of impacts contained in the studies to be generally consistent, even though different impact horizon years had been used (2010 for HPS and 2015 for the other studies).

Table 4.1-1 summarizes the transportation, traffic, and circulation impacts and their level of significance.

TABLE 4.1-1: SUMMARY OF TRANSPORTATION, TRAFFIC, AND CIRCULATION IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Increased cumulative traffic at Third Street/Cesar Chavez Street intersection	○	○	●	●
Increased cumulative traffic on U.S. 101 and I-280 freeway segments	○	○	●	●
Increased cumulative traffic at Third Street/Evans Avenue intersection	○	○	◐	◐
Increased cumulative traffic at Evans Avenue/Cesar Chavez Street intersection	○	○	◐	◐
Unmet demand for public transportation	○	○	◐	◐
Unmet demand for pedestrian and bicycle facilities	○	○	◐	◐
Increased traffic at other intersections	○	○	◐	◐
Increased traffic on freeways and ramps	○	○	◐	◐
Increased truck traffic	○	○	◐	◐

Legend:

Significant Impact, Unmitigable

Significant Impact, Mitigable

Less Than Significant Impact

No Impact

***Future Transportation Network and Background Growth***

Future transportation conditions have been assessed assuming that the funded and/or approved intersection, roadway, and transit improvements identified in Section 3.1 are realized, together with improvements proposed as a part of the reuse alternatives. These include the following:

- The HPS street grid system would be established to maximize the use of existing HPS streets and access points.
- HPS streets would be resurfaced and lanes clearly marked.

- Stop signs would be installed at proposed intersections throughout HPS at locations that currently have through traffic.
- Crisp Avenue would become a through arterial street, and the South Gate would be open to traffic.
- All HPS streets would contain sidewalks and some on-street parking.
- Truck routes would be designated within HPS.
- Pedestrian and bicycle facilities would be provided.
- Public transportation service into HPS would be extended/expanded.
- All inactive railroad track within HPS would be removed.

Planned but unfunded or unapproved projects that may be implemented as described in Section 3.1 were also considered in this analysis. Transportation impacts are assessed in the context of future traffic growth that is expected to occur without the reuse of HPS. Growth forecasts for 2010 were developed by the Metropolitan Transportation Commission (MTC) based on anticipated land use/demographic patterns developed by the Association of Bay Area Governments (ABAG). For 2025, growth forecasts were estimated based on trends between 1990 and 2010 conditions (because information on regional future land use and transportation infrastructure plans has not been developed by county and regional governments for this future year) and travel projections. Transportation improvements assumed for both 2010 and 2025 are taken from the Regional Transportation Plan (RTP) for the nine-county San Francisco Bay Area, as identified by MTC. Reducing one through lane of traffic in each direction along portions of Third Street resulting from the Third Street LRT Extension project also was included.

Travel Demand

Separate growth rates were developed for the Proposed Reuse Plan and the Reduced Development Alternative. The potentially affected freeways, ramps, and intersections within HPS and the South Bayshore planning area were analyzed separately. Traffic volume estimates were obtained by adding projected growth rates to the "background" traffic volume.

The number of average daily person trips¹ and the corresponding number of average daily vehicle trips associated with the Proposed Reuse Plan and the Reduced Development Alternative for 2010 and 2025 are presented in Table 4.1-2.

The number of daily person trips was calculated based on each of the associated land uses proposed for HPS redevelopment. Each land use element has a different daily person trip generation factor associated with it, as well as daily vehicle trips, depending on the combination of transportation modes (e.g., automobiles, carpool, van pool, taxi, motorcycles, walking). For each reuse alternative, the daily person trips and corresponding daily vehicle trips were calculated for each of the proposed land uses and totaled. In addition, A.M. and P.M. Peak hour person trips and vehicle trips were calculated and used to conduct the transportation analysis (Appendix B, Table B-9). For example, under the Proposed Reuse Plan, the HPS project would generate about 2,355 person trips in vehicles, 655 transit trips, 495 other trips (taxi, bicycle, motorcycle, walking, etc.) for a total of 3,505 total person trips in the A.M. peak hour in year 2010 (Appendix B, Table B-10). This would result in about 67 percent of all A.M. peak hour trips in automobiles, 19 percent by transit, and 14 percent by other modes. This distribution is based on the objectives and policies of the Proposed Reuse Plan regarding the use of transit and alternative modes at HPS, which would be achieved through mitigation measures described later in this section. The P.M. peak hour person trips would be higher than the A.M. peak hour (3,920 versus 3,505 for year 2010 [Appendix B, Table B-10]), because the retail uses would generate more trips in the P.M. peak hour than the A.M. peak hour. However, the percentage of people using various modes would be similar.

The peak hour traffic could be slightly higher in the evening in all of the scenarios evaluated. The results are shown in Table 4.1-2 on a percentage basis.

Trip Distribution

Trip distribution patterns were based on the Citywide Travel Behavior Survey (CTBS) data for Superdistrict 3² within San Francisco.

¹ Person-trips refer to the number of people coming to and leaving HPS. This is different from vehicle-trips, which refer only to the number of vehicles coming into and leaving HPS. Person-trips include people taking different forms of transportation, such as bus, car, carpool, etc.

² Superdistrict 3 is bounded by Twin Peaks, San Francisco Bay, and the San Mateo county line. Superdistrict 3 includes the South Bayshore, Potrero Hill, Mission, Eureka Valley, Glen Park, and Diamond Heights districts. The superdistrict is shown on Figure B-1 in Appendix B.

Approximately 75 percent of projected vehicle-trips to and from HPS would be from within the City, with 25 percent from regions outside the City. This pattern was used as the basis for assigning the projected vehicle-trips to local streets. (See Appendix B for the methodology and assumptions used to generate travel demand and trip distribution.)

TABLE 4.1-2: PROJECTED DAILY PERSON TRIPS AND VEHICLE TRIPS

SCENARIO	TOTAL DAILY PERSON TRIPS	TOTAL DAILY VEHICLE TRIPS	PEAK HOUR*	
			A.M.	P.M.
Proposed Reuse Plan				
2010	33,415	12,686	10.5%	11.7%
2025	58,700	21,832	9.1%	10.3%
Reduced Development Alternative				
2010	14,900	5,580	8.8%	10.0%
2025	27,390	10,000	7.8%	9.6%

Source: Korve Engineering, Inc., 1995.

Notes: * As a percentage of total Daily Person Trips.

4.1.1 Navy Disposal

The disposal of Federal property at HPS out of Federal ownership would not result in any direct changes in traffic conditions. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.1.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Sixteen intersections were identified as most likely to be affected by the Proposed Reuse Plan (see Figure 3.1-5). Fourteen intersections are existing and two are new intersections within HPS. By 2015, there would be significant cumulative traffic impacts at the Third Street/Cesar Chavez intersection, as well as along portions of the U.S. 101 and I-280 freeway segments. By 2025, the project would contribute to the overcrowding of Third Street/Evans Avenue and Evans Avenue/Cesar Chavez Street intersections and to overly long delays for vehicles using them.

Significant Unmitigable Impacts

Impact 1: Increased Cumulative Traffic at Third Street/Cesar Chavez Street Intersection. Whether or not the Proposed Reuse Plan for HPS is adopted and implemented, traffic volumes on major arterials, such as Third Street, are expected to increase. In addition, the planned Third Street LRT project will result in the reduction of roadway capacity in some areas, caused by the elimination of one lane of traffic in each direction on portions of Third Street. The result of both of these factors (increased volumes and decreased capacity) would be a significant cumulative effect. The Proposed Reuse Plan would contribute approximately 19 percent to the total cumulative traffic

volume at the signalized Third Street / Cesar Chavez Street intersection, and this intersection would operate at LOS F during the P.M. peak hour in 2015 (see Tables B-19 and B-21 in Appendix B). Other intersections along Third Street could also experience significant cumulative traffic delays.

The following mitigation measures would reduce, but not eliminate, cumulative traffic congestion, which would remain significant. To reduce vehicle miles traveled, traffic congestion, and air quality impacts and to ensure that transit ridership is encouraged and transit services meet or exceed demand for those services, the San Francisco Redevelopment Agency (Agency) and its designees would adopt a Transportation Demand Management (TDM) approach consisting of the following elements:

- Form an HPS Transportation Management Association (TMA) of HPS property owners and tenants to implement a Transportation System Management Plan (TSMP). Establish a coordinating committee with representatives of the Citizen's Advisory Committee (CAC), Agency, and appropriate City staff, including representatives from the Department of Parking and Traffic, San Francisco Municipal Railway (MUNI), and the Department of Public Works.
- Prepare a TSMP, which would contain the following elements:
 - ◊ *Transit Pass Sales.* Establish a convenient location or locations within the boundaries of HPS for selling transit passes.
 - ◊ *Transit, Pedestrian, and Bicycle Information.* Provide maps of local pedestrian and bicycle routes, transit stops and routes, and other information on signs and kiosks in occupied areas of HPS. Provide rideshare information and services through RIDES or an equivalent program.
 - ◊ *Employee Transit Subsidies.* Require major employers to use a transit subsidy system (e.g., through the Commuter Check Program) for their employees.
 - ◊ *Monitor Transit Demand and Implement Planned Services.* Monitor transit demand at HPS on an annual basis and ensure that planned services are implemented to meet or exceed demand. When HPS utilization includes 1,500 new employees or residents, implement those transit improvements contained in the Proposed Reuse Plan that are necessary to meet demand, including proposed MUNI extensions, if applicable. Continue to re-evaluate transit demand and implement required improvements on an annual basis thereafter, and curtail commercial and residential development until required

services are funded and implemented, if necessary, to prevent an imbalance between transit demand and services.

- ◊ *Secure Bicycle Parking.* Require provisions for secured bicycle parking spaces in parking lots and parking garages of residential buildings and research and development facilities. Require major employers to provide lockers and showers for bicyclists.
- ◊ *Parking Management Guidelines.* Establish parking management guidelines for the private operators of parking facilities in HPS to discourage long-term parking. Set aside desirable parking areas for rideshare vehicles.

If deemed appropriate by the TMA, the TSMP could contain the following additional elements:

- *Flexible Work Time/Telecommuting.* Where feasible, offer HPS employees the opportunity to work on flexible schedules and/or telecommute so they can avoid peak hour traffic conditions.
- *Shuttle Service.* Operate shuttle bus service between HPS and regional transit stops in San Francisco (e.g., MUNI, Third Street LRT, Bay Area Rapid Transit (BART), California Train (CalTrain), Transbay transit terminal, and ferry terminal).
- *Monitor Physical Transportation Improvements.* Monitor physical transportation improvements, such as street repaving and resurfacing and installation of street lighting, and ensure that planned improvements are implemented when necessary to meet the needs of new residents and employees.
- *Ferry Service.* Assist the Port of San Francisco and others in ongoing studies of the feasibility of expanding regional ferry service. Assist in implementing feasible study recommendations (if any) related to HPS service.
- *Local Hiring Practices.* Encourage hiring local workers to fill new jobs at HPS. Qualified workers who reside in the Bayview-Hunters Point neighborhood should be given priority for new employment opportunities.

Impact 2: Increased Cumulative Traffic on U.S. 101 and I-280 Freeway Segments. Whether or not the Proposed Reuse Plan for HPS is adopted and implemented, freeway mainline traffic volumes on U.S. 101 near the county line and along I-280 south of U.S. 101 are expected to increase. The Proposed Reuse Plan would contribute approximately two percent or less to total cumulative traffic volumes on these freeway segments (see Table B-22 in Appendix B). Freeway mainline

LOS at I-280 south of U.S. 101 would operate at LOS E or F during the P.M. peak hours in 2015. U.S. 101 at the county line would operate at LOS D, E, or F depending on the amount of background growth in the immediate vicinity of the county line. Since there is no plan to increase the freeway mainline capacity at either of these locations, this cumulative impact would be significant. The project's contribution to increased traffic would be reduced, but not eliminated, by the mitigation measures described for Impact 1 above.

Significant and Mitigable Impacts

Impact 1: Increased Cumulative Traffic at Third Street/Evans Avenue Intersection. Whether or not the Reuse Plan for HPS is adopted and implemented, the signalized Third Street/Evans Avenue intersection would operate at LOS F during both the A.M. and P.M. peak hour conditions by 2010. This would be considered a significant and mitigable impact. The addition of project-related traffic would contribute to long delays (i.e., over 60 seconds/vehicle) at this intersection (see Table 4.1-3, Table 4.1-4, and Figure 4.1-1).

By 2025, approximately 28 percent of the total traffic at this intersection would be during the A.M. peak hour and 30 percent during the P.M. peak hour. The intersection would operate at LOS F during both the A.M. and P.M. peak hours. This would be a significant and mitigable impact.

Mitigation 1. Eliminate the southbound left-turn lane and re-route turns via Phelps Street to Evans Street. Signalize the Phelps/Evans intersection and remove parking along Phelps and Evans Streets. This would reduce traffic impacts at this intersection from LOS F to LOS D in the A.M. and P.M. peak hours. In addition, adopt a transportation system management approach as described under Significant Unmitigable Impact 1. Implementing these measures would reduce this impact to a less than significant level.

Impact 2: Increased Cumulative Traffic at Evans Avenue/Cesar Chavez Street Intersection. Whether or not the Reuse Plan for HPS is adopted and implemented, traffic operating conditions at the signalized intersection of Evans Avenue/Cesar Chavez Street during the P.M. peak hour would worsen from LOS D to LOS E at full build-out in 2025. This would be a significant and mitigable impact. The addition of project-related traffic would contribute to this impact.

TABLE 4.1-3: INTERSECTION LEVEL OF SERVICE—YEAR 2010

INTERSECTION	EXISTING 1993 CONDITIONS			2010 BASELINE (NO ACTION ALTERNATIVE)						PROPOSED REUSE PLAN			REDUCED DEVELOPMENT ALTERNATIVE					
	A.M. PEAK		P.M. PEAK		A.M. PEAK		P.M. PEAK		A.M. PEAK		P.M. PEAK		A.M. PEAK		P.M. PEAK		A.M. PEAK	
	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS
Crisp Avenue/Spear Avenue*	3.0	A	2.8	A	3.0	A	2.8	A	5.9	B	4.7	A	3.5	A	3.2	A		
Crisp Avenue/I Street*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	6.6	B	7.7	B	3.8	A	4.0	A		
Galvez Avenue/Spear Avenue*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.1	B	8.7	B	3.9	A	4.8	A		
Galvez Avenue/Donahue Street*	3.3	A	2.9	A	3.3	A	2.9	A	4.2	A	5.0	A	3.0	A	3.3	A		
Innes Avenue/Donahue Street*	0.2	A	0.2	A	0.2	A	0.2	A	0.2	A	0.3	A	0.2	A	0.2	A		
Lockwood Street/Donahue St.*	3.5	A	3.5	A	3.5	A	3.5	A	4.6	A	4.8	A	3.7	A	3.8	A		
Lockwood Street/Spear Avenue*	2.7	A	2.7	A	2.7	A	2.7	A	2.9	A	3.1	A	2.7	A	3.1	A		
Jennings Street/Evans Avenue*	6.0	B	8.0	B	6.0	B	8.0	B	12.2	B	25.8	D	15.3	C	39.2	D		
Third Street/Evans Avenue (2)	17.8	C	16.2	C	25.8	D	29.0	D	(1)	F	(1)	F	36.8	D	25.7	D		
Third Street/Cargo Way (2)	18.8	C	11.2	B	33.1	D	11.7	B	26.8	D	11.3	B	30.2	D	11.6	B		
Third Street/Cesar Chavez St. (2)	12.7	B	14.3	B	12.9	B	12.3	B	32.4	D	17.8	C	14.5	B	13.4	B		
Evans Avenue/Cesar Chavez St.	24.0	C	39.4	D	35.0	D	25.6	D	34.9	D	21.6	C	17.5	C	20.4	C		
Evans Ave./Napolean & Tolano	6.8	B	6.7	B	6.3	B	6.3	B	8.8	B	11.4	B	7.0	B	7.5	B		
Third Street/Carroll Avenue (2)	5.9	B	5.9	B	5.6	B	5.8	B	5.7	B	5.9	B	5.7	B	5.8	B		
Third Street/Gilman Avenue (2)	11.7	B	9.7	B	11.5	B	9.3	B	11.3	B	9.4	B	11.4	B	9.3	B		
Third Street/Palou Avenue (2)	11.2	B	10.0	B	9.4	B	9.4	B	10.0	B	10.0	B	9.6	B	9.6	B		

Source: Kolve Engineering, Inc., 1995.

Notes:

(1) Excessive delay; congested conditions (delay greater than 60 seconds).

(2) The delay and LOS reported for Third Street intersections do not assume the removal of one through lane along portions of Third Street, a component of the Third Street LRT extension project. The Third Street LRT analysis (U.S. Department of Transportation, Federal Transit Administration and City and County of San Francisco, Planning Department, 1998) calculated LOS at Third Street intersections for 2015 conditions in the P.M. peak hour only, as opposed to 2010 conditions for both A.M. and P.M. peak, as reported in this table. However, based on a comparison of LOS for 2010 (in the HPS analysis) and 2015 conditions (in the Third Street LRT analysis), the only intersection where there is a discrepancy in the results of these two analyses is at Third Street/Cesar Chavez Street. Without the assumed reduction of one through lane in each direction from the proposed Third Street LRT project, Third Street/Cesar Chavez Street would operate at LOS C by 2010 in the P.M. peak hour under the Proposed Reuse Plan and LOS B under the Reduced Development Alternative. However, with the reduction of one lane, this intersection would operate at LOS F by 2015 in the weekday P.M. peak hour under both reuse alternatives.

* Unsignalized intersections: minor street movement delay and LOS.

TABLE 4.1-4: INTERSECTION LEVEL OF SERVICE—YEAR 2025

INTERSECTION	EXISTING 1993 CONDITIONS			2025 BASELINE (NO ACTION ALTERNATIVE)				PROPOSED REUSE PLAN				REDUCED DEVELOPMENT ALTERNATIVE				
	A.M. PEAK		P.M. PEAK	A.M. PEAK		P.M. PEAK		A.M. PEAK		P.M. PEAK		A.M. PEAK		P.M. PEAK		
	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS	DELAY (sec/veh)	LOS		
Crisp Avenue/Spear Avenue*	3.0	A	2.8	A	3.0	A	2.8	A	7.4	B	6.6	B	3.8	A	3.7	A
Crisp Avenue/I Street*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7.9	B	9.8	B	4.1	A	4.4	A
Galvez Avenue/Spear Avenue*	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	9.8	B	24.7	D	4.3	A	7.0	B
Galvez Avenue/Donahue Street*	3.3	A	2.9	A	3.3	A	2.9	A	5.8	B	12.0	C	3.2	A	4.0	A
Innes Avenue/Donahue Street*	0.2	A	0.2	A	0.2	A	0.2	A	0.3	A	0.4	A	0.2	A	0.3	A
Lockwood Street/Donahue St.*	3.5	A	3.5	A	3.5	A	3.5	A	5.4	B	5.8	B	3.9	A	4.2	A
Lockwood Street/Spear Avenue*	2.7	A	2.7	A	2.7	A	2.7	A	3.6	A	3.9	A	3.3	A	3.7	A
Jennings Street/Evans Avenue*	6.0	B	8.0	B	6.0	B	8.0	B	12.7	B	23.5	C	13.7	B	15.3	C
Third Street/Evans Avenue (2)	17.8	C	16.2	C	31.8	D	17.2	C	(1)	F	(1)	F	39.8	D	38.0	D
Third Street/Cargo Way (2)	18.8	C	11.2	B	11.8	B	11.6	B	11.7	B	12.1	B	11.6	B	11.8	B
Third Street/Cesar Chavez St. (2)	12.7	B	14.3	B	13.8	B	12.9	B	35.4	D	36.7	D	34.7	D	16.4	C
Evans Avenue/Cesar Chavez St.	24.0	C	39.4	D	37.4	D	35.0	D	35.6	D	43.0	E	37.5	D	38.1	D
Evans Ave./Napolean & Tolano	6.8	B	6.7	B	6.4	B	6.5	B	13.5	B	26.2	D	7.6	B	9.6	B
Third Street/Carroll Avenue (2)	5.9	B	5.9	B	5.7	B	5.8	B	6.0	B	6.1	B	5.8	B	6.0	B
Third Street/Gilman Avenue (2)	11.7	B	9.7	B	11.2	B	9.5	B	11.3	B	9.7	B	11.2	B	9.6	B
Third Street/Palou Avenue (2)	11.2	B	10.0	B	9.9	B	9.9	B	10.8	B	10.9	B	10.3	B	10.3	B

Source: Korve Engineering, Inc., 1995.

Notes:

(1) Excessive delay; congested conditions (delay greater than 60 seconds).

(2) The delay and LOS reported for Third Street intersections do not assume the removal of one through lane along portions of Third Street, a component of the Third Street LRT extension project. The Third Street LRT analysis (U.S. Department of Transportation, Federal Transit Administration and City and County of San Francisco, Planning Department, 1998) calculated LOS at Third Street intersections for 2015 conditions in the P.M. peak hour only, as opposed to 2025 conditions for both A.M. and P.M. peaks, as reported in this table. However, based on a comparison of LOS for 2025 (in the HPS analysis) and 2015 conditions (in the Third Street LRT analysis), the only intersection where there is a discrepancy in the results of these two analyses is at Third Street/Cesar Chavez Street. Without the assumed reduction of one through lane in each direction from the proposed Third Street LRT project, Third Street/Cesar Chavez Street would operate at LOS D by 2025 in the P.M. peak hour under the Proposed Reuse Plan and LOS C under the Reduced Development Alternative. However, with this reduced traffic lane, this intersection would operate at LOS F by 2015 in the weekday P.M. peak hour under both reuse alternatives.

* Unsignalized intersections: minor street movement delay and LOS.

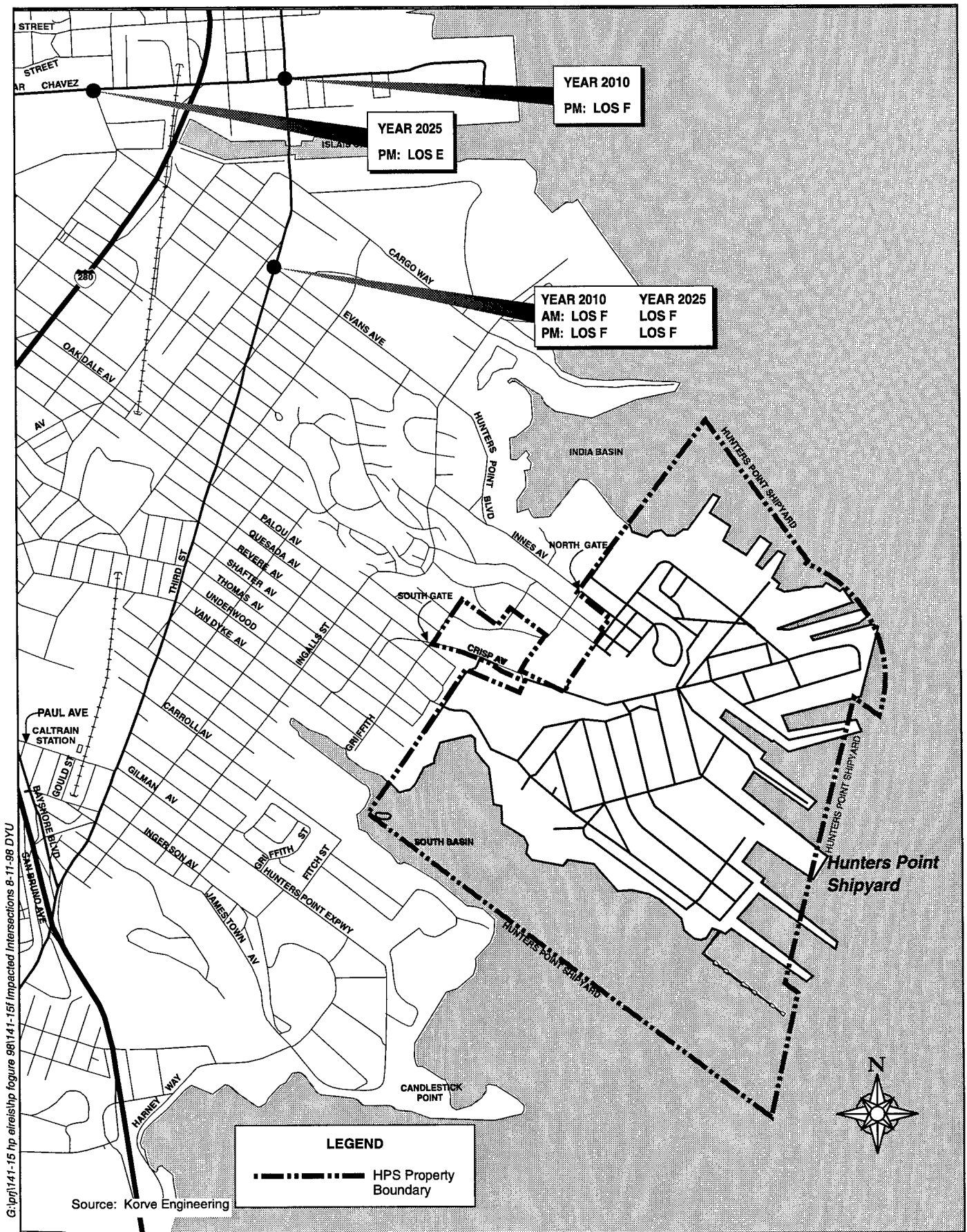


Figure 4.1-1: Affected Intersections Under Proposed Reuse Plan Conditions

Mitigation 2. To improve operations and reduce delays at this intersection, restripe the existing northbound shared left/right-turn lane on Evans Avenue to create exclusive left-turn and right-turn lanes. Widen the Evans Avenue northbound approach at Cesar Chavez Street. The southeast corner curb return would require structural modifications of the existing viaduct. Change the existing signal timing plan to include the exclusive left-turn and right-turn lanes. These mitigation measures would reduce traffic impacts at this intersection from LOS E to LOS C during the P.M. peak hour, with delays reduced from 43.0 to 18.3 seconds.

In addition, form an HPS TMA and prepare and implement a TSMP, as described under Significant Unmitigable Impact 1. Implementing these measures would reduce this impact to a less than significant level.

Impact 3: Unmet Demand for Public Transportation. HPS is currently serviced by the #19 Polk line, which runs at 10-minute intervals between 7:00 A.M. and 9:00 A.M. and then at 15-minute intervals until 7:42 P.M. (the last bus). The ridership on this line in the HPS vicinity is very light. Significant and mitigable impacts on public transportation (transit) services would result from the increase in transit demand shown in Table 4.1-5. The Proposed Reuse Plan includes a transit implementation plan to accommodate public transportation demand associated with anticipated land uses. The implementation plan envisions expansions and extensions of existing MUNI services in the HPS area that would be phased to meet the distribution of project-specific development over time (Gonot, 1995)³.

Mitigation 3. Form an HPS TMA and prepare and implement a TSMP, as described under Significant Unmitigable Impact 1, including monitoring transit demand and implementing planned service extensions. Implementing these measures would reduce this impact to a less than significant level.

³ At this time, the San Francisco Municipal Railway *Short-Range Transit Plan* (1995 - 2005) does not include service expansions to HPS.

TABLE 4.1-5: PROJECT TRANSIT TRIPS

SCENARIO	P.M. PEAK HOUR					
	MUNI		CALTRAIN		BART	
	INBOUND	OUTBOUND	INBOUND	OUTBOUND	INBOUND	OUTBOUND
Proposed Reuse Plan						
Year 2010	426	334	64	50	59	46
Year 2025	504	546	76	82	69	75
Reduced Development Alternative						
Year 2010	118	133	18	20	16	18
Year 2025	160	230	24	35	22	32

Source: Korve Engineering, Inc.

Notes:

* All regional transit (CalTrain, BART) trips to and from HPS require a transfer to/from MUNI and are included in MUNI inbound and outbound trips.

Impact 4: Unmet Demand for Pedestrian and Bicycle Facilities. Pedestrian and bicycle activity at HPS would be generated under the Proposed Reuse Plan. Until planned facilities are constructed, the increase in activity may not be accommodated.

Mitigation 4. Require completion of planned pedestrian and bicycle facilities as part of adjacent development. Monitor and ensure completion of these facilities as part of the TSMP described under Significant Unmitigable Impact 1. Implementing these measures would reduce this impact to a less than significant level.

Less Than Significant Impacts

Increased Traffic at Other Intersections. The Proposed Reuse Plan would result in a less than significant increase in the number of vehicles on HPS roadways and adjacent roadways that could affect the operating conditions of other intersections throughout the South Bayshore area and within HPS. As indicated on Tables 4.1-3 and 4.1-4, these intersections would continue to operate at acceptable levels of service (LOS D or better) with the addition of traffic generated by proposed reuse. No mitigation is required.

Increased Traffic on Freeways and Ramps. Less than significant project impacts on three freeway locations (U.S. 101 at the San Mateo county line, I-280 south of U.S. 101, and I-80/Oakland-Bay Bridge) would result from increased traffic volumes and v/c ratios under the Proposed Reuse Plan (see Table 4.1-6). However, 2010 Oakland-Bay Bridge westbound A.M. peak traffic would approach a v/c of 1.0 (0.97). By 2025, the Oakland-Bay Bridge eastbound A.M. and P.M. peak traffic would also approach a v/c of 1.0. Because the v/c ratio would not exceed 1.0, project impacts would be less than significant. No mitigation is required.

Less than significant project impacts on the 11 freeway ramp locations within the South Bayshore area would result from increased traffic volumes and v/c ratios under the Proposed Reuse Plan (see Tables 4.1-7 and 4.1-8). As Table 4.1-7 indicates, all study ramps would remain operating at under capacity (i.e., v/c ratio less than 1.0) conditions for 2010. Ramps that would experience the greatest increase in traffic volumes as a result of the Proposed Reuse Plan would include the I-280 northbound off-ramp to Cesar Chavez Street, the U.S. 101 northbound off-ramp to Bayshore Boulevard/Cesar Chavez Street, and the I-280 northbound on-ramp from Indiana Street. No mitigation is required.

TABLE 4.1-6: FREEWAY VOLUME-TO-CAPACITY RATIOS

SCREENLINE LOCATION	DIRECTION	EXISTING 1993 CONDITIONS			2010 BASELINE (NO ACTION ALTERNATIVE)			2010 CONDITIONS (4)		
		A.M. PEAK		P.M. PEAK		A.M. PEAK		P.M. PEAK		
		VOLUME	V/C RATIO	VOLUME	V/C RATIO	VOLUME	V/C RATIO	VOLUME	V/C RATIO	VOLUME
U.S. 101, at the SF County Line (1)	Northbound	6,400	0.70	6,350	0.69	6,490	0.71	6,400	0.70	6,590
	Southbound	7,050	0.77	6,250	0.68	7,150	0.78	6,330	0.69	7,260
SF/Oakland Bay Bridge (2)	Eastbound	7,910	0.69	9,190	0.80	9,670	0.84	9,910	0.86	9,730
	Westbound	10,500	0.91	8,230	0.72	11,070	0.96	9,270	0.81	11,130
I-280, south of U.S. 101 (3)	Northbound	7,500	0.82	3,950	0.43	7,610	0.83	3,950	0.43	7,730
	Southbound	3,350	0.36	8,300	0.90	3,350	0.36	8,430	0.92	3,450
										8,550
										0.93

SCREENLINE LOCATION	DIRECTION	2025 BASELINE (NO ACTION ALTERNATIVE)			2025 CONDITIONS (4)		
		A.M. PEAK		P.M. PEAK		A.M. PEAK	
		VOLUME	V/C RATIO	VOLUME	V/C RATIO	VOLUME	V/C RATIO
U.S. 101, at the SF County Line (1)	Northbound	6,540	0.71	6,490	0.71	6,720	0.73
	Southbound	7,260	0.79	6,370	0.69	7,400	0.80
SF/Oakland Bay Bridge (2)	Eastbound	11,390	0.99	10,650	0.93	11,470	1.0
	Westbound	11,030	0.96	10,350	0.90	11,130	0.97
I-280, south of U.S. 101 (3)	Northbound	7,670	0.83	3,950	0.43	7,880	0.86
	Southbound	3,350	0.36	8,500	0.92	3,520	0.38

Source: Kolve Engineering, Inc.

Notes: (1) = Caltrans traffic volumes, July 1993.

(2) = Alternatives to Replacement of the Embarcadero Freeway and the Terminal Separator Structure (City and County of San Francisco, Planning Department, 1996c).

(3) = Caltrans traffic volumes, August 1993.

(4) = With additional cumulative development projects, including the proposed Candlestick Point Stadium and Retail/Entertainment Center and intensive development on the Brisbane Baylands parcels, the v/c ratios at the county line along U.S. 101 (northbound and southbound) and I-280 southbound would reach or exceed 1.0 during the P.M. peak hour.

TABLE 4.1-7: RAMP VOLUME-TO-CAPACITY RATIOS—YEAR 2010

FRWY	ON-/OFF-RAMP	EXISTING 1993 CONDITIONS						2010 BASELINE (NO ACTION ALTERNATIVE)						PROPOSED REUSE PLAN (1)						REDUCED DEVELOPMENT ALTERNATIVE (1)					
		A.M. PEAK HOUR			P.M. PEAK HOUR			A.M. PEAK HOUR			P.M. PEAK HOUR			A.M. PEAK HOUR			P.M. PEAK HOUR			A.M. PEAK HOUR			P.M. PEAK HOUR		
		VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C
I-280	NB Off-ramp		to Cesar Chavez St.	525	0.31	335	0.20	0.20	540	0.32	345	0.20	700	0.41	565	0.33	610	0.36	410	0.24					
	NB On-ramp		from Indiana St.	1,210	0.71	1,420	0.84	0.86	1,245	0.73	1,465	0.86	1,360	0.80	1,570	0.92	1,280	0.75	1,510	0.89					
	SB Off-ramp		to Pennsylvania St.	560	0.33	800	0.47	0.48	575	0.34	825	0.48	675	0.40	960	0.56	620	0.36	865	0.51					
U.S. 101	NB Off-ramp		to Bayshore Blvd./ Cesar Chavez St.	1,840	0.87	1,625	0.76	0.79	1,895	0.89	1,675	0.79	2,035	0.96	1,800	0.85	1,935	0.91	1,730	0.81					
	NB On-ramp		from Bayshore Blvd. (Near Cesar Chavez St.)	1,155	0.68	690	0.41	0.42	1,185	0.70	715	0.42	1,255	0.74	780	0.46	1,210	0.71	740	0.44					
	NB On-ramp		from Cesar Chavez St.	460	0.27	490	0.29	0.30	475	0.28	505	0.30	545	0.32	570	0.34	495	0.29	535	0.31					
	SB Off-ramp		to Cesar Chavez St.	750	0.44	200	0.12	0.12	775	0.45	205	0.12	835	0.49	290	0.17	800	0.47	230	0.14					
	NB Off-ramp		to Third St./ Bayshore Blvd.	1,875	0.88	860	0.40	0.42	1,930	0.91	885	0.42	1,985	0.94	960	0.45	1,955	0.92	910	0.43					
	NB On-ramp		from Third St./ Bayshore Blvd.	620	0.36	490	0.29	0.30	640	0.38	505	0.30	685	0.40	565	0.33	660	0.39	525	0.31					
	SB Off-ramp		to Bayshore Blvd./ Third St.	735	0.43	715	0.42	0.43	755	0.45	735	0.43	810	0.48	785	0.46	770	0.45	755	0.45					
	SB On-ramp		from Bayshore Blvd./ Third St.	710	0.42	1,460	0.86	0.88	730	0.43	1,504	0.88	795	0.47	1,565	0.92	750	0.44	1,530	0.90					

Source: Kolve Engineering, Inc.

Notes:

(1) These volumes do not include potential traffic generated by the Candlestick Point Stadium Retail/Entertainment Center project.

TABLE 4.1-8: RAMP VOLUME-TO-CAPACITY RATIO—YEAR 2025

FRWY	ON-/OFF-RAMP	EXISTING 1993 CONDITIONS						2025 BASELINE (NO ACTION ALTERNATIVE)						PROPOSED REUSE PLAN (1)						REDUCED DEVELOPMENT ALTERNATIVE (1)					
		A.M. PEAK HOUR			P.M. PEAK HOUR			A.M. PEAK HOUR			P.M. PEAK HOUR			A.M. PEAK HOUR			P.M. PEAK HOUR			A.M. PEAK HOUR			P.M. PEAK HOUR		
		VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C	VOL		V/C
I-280	NB Off-ramp	to Cesar Chavez St.			525	0.31	335	0.20	550	0.32	355	0.21	835	0.49	635	0.37	675	0.40	450	0.27					
	NB On-ramp	from Indiana St.			1,210	0.71	1,420	0.84	1,270	0.75	1,490	0.88	1,400	0.83	1,680	0.99	1,320	0.78	1,580	0.93					
	SB Off-ramp	to Pennsylvania St.			560	0.33	800	0.47	590	0.35	840	0.49	765	0.45	1,015	0.60	665	0.39	900	0.53					
U.S. 101	NB Off-ramp	to Bayshore Blvd./ Cesar Chavez St.			1,840	0.87	1,625	0.76	1,915	0.91	1,700	0.80	2,115	0.99	1,945	0.92	1,990	0.94	1,815	0.86					
	NB On-ramp	from Bayshore Blvd. (Near Cesar Chavez St.)			1,155	0.68	690	0.41	1,210	0.71	725	0.43	1,300	0.76	845	0.50	1,240	0.73	780	0.46					
	NB On-ramp	from Cesar Chavez St.			460	0.27	490	0.29	485	0.28	515	0.30	570	0.34	630	0.70	510	0.30	570	0.33					
	SB Off-ramp	to Cesar Chavez St.			750	0.44	200	0.12	790	0.46	210	0.12	895	0.53	315	0.19	835	0.49	245	0.15					
	NB Off-ramp	to Third St./ Bayshore Blvd.			1,875	0.88	860	0.40	1,970	0.93	905	0.42	2,070	0.98	1,000	0.47	2,010	0.95	935	0.44					
	NB On-ramp	from Third St./ Bayshore Blvd.			620	0.36	490	0.29	650	0.38	515	0.30	730	0.49	595	0.35	685	0.40	545	0.32					
	SB Off-ramp	to Bayshore Blvd./ Third St.			735	0.43	715	0.42	770	0.45	750	0.44	840	0.49	837	0.49	795	0.47	790	0.47					
	SB On-ramp	from Bayshore Blvd./ Third St.			710	0.42	1,460	0.86	745	0.44	1,535	0.90	830	0.47	1,640	0.96	775	0.46	1,580	0.93					

Source: Kolve Engineering, Inc.

Notes:

(1) These volumes do not include potential traffic generated by the Candlestick Point Retail/Entertainment Center Project.

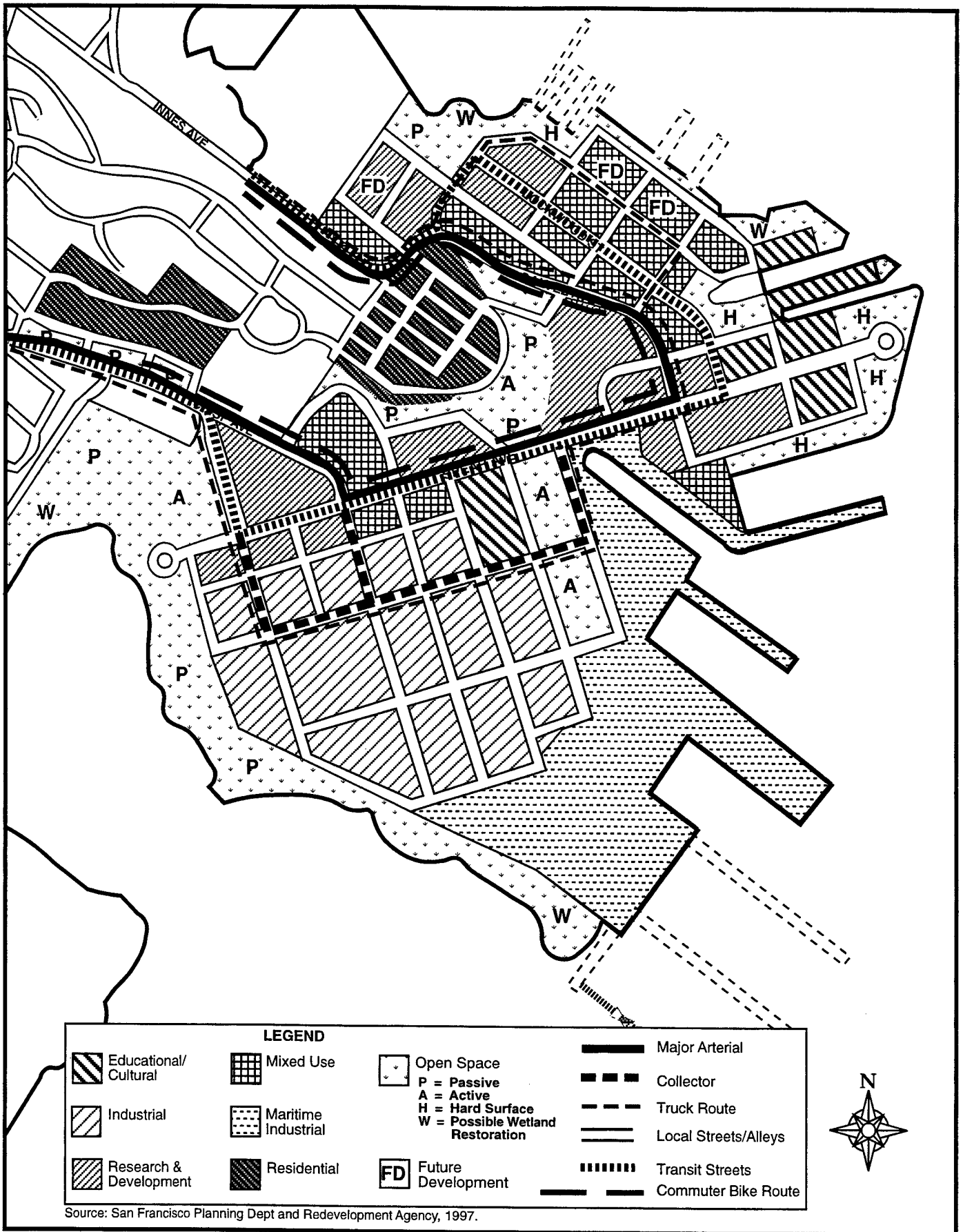
Increased Truck Traffic. The Proposed Reuse Plan would result in an increase in the number of trucks traveling to and from HPS. Using conservative assumptions of high truck use, the Proposed Reuse Plan would generate 80 trucks during the A.M. peak hour and 50 trucks during the P.M. peak hour in 2010 and 180 trucks during the A.M. peak hour and 110 trucks during the P.M. peak hour in 2025 (Appendix B, Table B-11). This amount of truck traffic could be accommodated within the capacity of the surrounding street system and therefore would not be considered significant. An increase in truck traffic could increase the potential for auto-truck conflicts, however, and could be perceived as unwanted by neighborhood residents. This potential could be minimized by directing truck traffic along designated traffic routes, such as those shown on Figure 4.1-2, and along new truck routes, should those be established. (For example, construction of the Yosemite Slough Bridge, described in Section 3.1, could help divert trucks away from residential areas and towards the south and U.S. 101.) No mitigation is required.

Reduced Development Alternative

Significant Unmitigable Impacts

Impact 1: Increased Cumulative Traffic at Third Street/Cesar Chavez Street Intersection. Whether or not the Reduced Development Alternative for HPS is adopted and implemented, traffic volumes on major arterials, such as Third Street, are expected to increase. Also, the planned Third Street LRT project will result in the reduction of roadway capacity in some areas, caused by the elimination of one lane of traffic in each direction on portions of Third Street. The result of both of these factors (increased volumes and decreased capacity) would be a significant cumulative effect. The Reduced Development Alternative would contribute to the total cumulative traffic volume at the signalized Third Street/Cesar Chavez Street intersection. This intersection would operate during the P.M. peak hour at LOS F in 2015 with the extension of the Third Street LRT line. Other intersections along Third Street could also experience significant cumulative traffic delays. The TDM mitigation measures listed under the Proposed Reuse Plan would reduce but not eliminate cumulative traffic congestion at the Third Street/Cesar Chavez Street intersection, which would remain significant.

Impact 2: Increased Cumulative Traffic on U.S. 101 and I-280 Freeway Segments. Projected freeway volumes for the HPS project are differentiated by year (2010 vs. 2025), not by alternative. Therefore, it would be anticipated that similar to the Proposed Reuse Plan, the Reduced Development Alternative would contribute to cumulatively significant freeway mainline traffic impacts at U.S. 101 near the county line and along I-280 south of U.S. 101. Assuming completion of the Candlestick Point Stadium and Retail/Entertainment Center



project, freeway mainline LOS at both of these locations would operate at LOS F during the P.M. peak hour in 2015. Since there is no plan to increase the freeway mainline capacity at either of these locations, this cumulative impact would be significant and unmitigable.

Less Than Significant Impacts

Increased Cumulative Traffic at Third Street/Evans Avenue Intersection.

Under the Reduced Development Alternative, increased traffic at Third Street/Evans Avenue would result in a less than significant impact. Tables 4.1-3 and 4.1-4 show that this intersection would operate at LOS D. No additional mitigation is required.

Increased Cumulative Traffic at Evans Avenue/Cesar Chavez Street Intersection. Under the Reduced Development Alternative, increased traffic at Evans Avenue/Cesar Chavez Street would result in a less than significant impact. Tables 4.1-3 and 4.1-4 show that this intersection would operate at LOS C. No additional mitigation is required.

Demand for Public Transportation. Under the Reduced Development Alternative, increased demand for public transportation would be substantially less than that projected under the Proposed Reuse Plan (see Table 4.1-5). No additional mitigation is required.

Demand for Pedestrian and Bicycle Facilities. Under the Reduced Development Alternative, increased demand for pedestrian and bicycle facilities would be less than under the Proposed Reuse Plan and would result in a less than significant impact, although the TSMP could be expanded to include monitoring demand for and implementation of planned facilities. No additional mitigation is required.

Increased Traffic at Other Intersections. Under the Reduced Development Alternative, all other study intersections would operate at LOS C or better, resulting in less than significant impacts (Tables 4.1-3 and 4.1-4). No additional mitigation is required.

Increased Traffic on Freeways and Ramps. Under the Reduced Development Alternative, as with the Proposed Reuse Plan, increased project traffic on nearby freeway segments and ramps would result in less than significant impacts. As shown in Tables 4.1-7 and 4.1-8, all 11 ramps would operate at less than capacity conditions. No additional mitigation is required.

Increased Truck Traffic. Under the Reduced Development Alternative, there would be an increase in the number of trucks traveling to and from HPS. However, compared to the Proposed Reuse Plan, there

would be about 50 percent fewer truck trips. Under the Reduced Development Alternative, a total of 40 trucks during the A.M. peak hour and 20 trucks during the P.M. peak hour would be generated in 2010 and 80 trucks during the A.M. peak hour and 50 trucks during the P.M. peak hour in 2025. No additional mitigation is required.

The Reduced Development Alternative also would result in a temporary demand for loading/unloading spaces for trucks traveling into HPS. This potential impact could be minimized to a less than significant level by directing truck traffic along designated truck traffic routes, such as those shown on Figure 4.1-2. No additional mitigation is required.

**4.1.3 No Action
Alternative**

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could continue the existing leases (see Appendix C). No impacts related to transportation, traffic, and circulation are anticipated, and no mitigation is required.

4.2 AIR QUALITY

The ROI for air quality varies with the type of air pollution under discussion. Pollutants that are directly emitted (such as carbon monoxide and some particulate matter) have a localized ROI generally restricted to areas in the immediate vicinity of the emission source. Pollutants produced by chemical reactions in the atmosphere (such as ozone and secondary pollutant matter) have an ROI that includes the entire San Francisco Bay Area. Air quality impacts would be considered significant if an alternative would result in any of the following:

- Produce emissions from industrial facilities, traffic, or construction activities that would cause or contribute to a violation of Federal or state ambient air quality standards.
- Exceed the Bay Area Air Quality Management District (BAAQMD) criterion of 80 pounds (36 kg) a day for emissions of ozone precursor or airborne particulate matter 10 microns or less in diameter (PM₁₀).
- Conflict with specific air quality management plan policies or programs.
- Foster or accommodate development in excess of the levels assumed by the applicable air quality management plan.

Air quality issues are of serious concern to residents of the Bayview-Hunter's Point community, and this analysis acknowledges that concern and the potentially degraded local air environment. The following analysis focuses on disposal and reuse, not on ongoing remediation activities. Potential air quality impacts to human and ecological receptors before, during, and after completion of remediation activities is described in Section 4.7, Hazardous Materials and Waste.

Table 4.2-1 summarizes air quality impacts and their level of significance. Information on the air analysis methodology and assumptions is provided in Appendix B.

4.2.1 Navy Disposal

The disposal of Federal property at HPS out of Federal ownership would not result in any direct air quality impacts. Transfers of ownership, interests and titles to land, facilities, real property, or personal property to other public agencies or to private parties are exempt from Clean Air Act (CAA) conformity determination requirements, Title 40 of the Code of Federal Regulations (C.F.R.) § 93.153(c)(xiv); 40 C.F.R. § 93.153(c)(xix); 40 C.F.R. § 93.153(c)(xx). However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

TABLE 4.2-1: SUMMARY OF AIR QUALITY IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Ozone precursor emissions from increased traffic	○	○	●	●
PM ₁₀ emissions from increased traffic	○	○	●	●
Toxic air contaminants from stationary, mobile, and cumulative sources	○	○	●	●
Airborne dust from construction and demolition	○	○	◐	◐
Carbon monoxide emissions from increased traffic congestion	○	○	◐	◐
Consistency with BAAQMD Air Quality Plan and the City Air Quality Element	○	○	◐	◐
Federal Clean Air Act conformity requirements	○	○	○	○

Legend:

Significant Impact, Unmitigable

Significant Impact, Mitigable

Less Than Significant Impact

No Impact



4.2.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Significant Unmitigable Impacts

Impact 1: Ozone Precursor Emissions from Increased Traffic. By providing for increased employment and housing, the Proposed Reuse Plan would result in increased vehicle travel, as described in Section 4.1.

Vehicle travel associated with the Proposed Reuse Plan would result in an increase in ozone precursor emissions and traffic-related PM₁₀ emissions.

Table 4.2-2 summarizes the estimated daily emissions of reactive organic compounds and nitrogen oxides (NO_x) for the different land use types under the Proposed Reuse Plan at partial build-out (2010) and at full build-out (2025). As Table 4.2-2 shows, reactive organic compounds and nitrogen oxide emissions would exceed the BAAQMD impact significance threshold of 80 pounds (36 kg) a day by approximately 28.6 and 127.6 pounds (12.9 and 57.8 kg) a day, respectively, in 2010. This impact is considered significant and unmitigable.

TABLE 4.2-2: SUMMARY OF EMISSIONS FROM VEHICLE TRAVEL ASSOCIATED WITH THE PROPOSED REUSE PLAN

Land Use	Amount of Development	Daily Vehicle Trips *	Daily VMT Estimate	Average Summer Weekday Traffic-related Emissions (pounds per day)		Average Weekday Exhaust Plus Tire Wear PM ₁₀ Emissions (pounds per day)		Average Weekday Traffic-related Carbon Monoxide Emissions (pounds per day)	
				ROC	NOx	Wear PM ₁₀ Emissions (pounds per day)	Summer	Winter	
DEVELOPMENT PATTERN FOR 2010									
SF and Duplex	800 UNITS	3,218	33,861	28.0	43.1	67.3	327.2	371.5	
Live/Work	307 UNITS	926	9,507	7.8	12.1	18.9	91.8	104.2	
Above Commercial	500 UNITS	1,508	15,466	12.7	19.7	30.7	149.3	169.4	
R&D	65,200 SQ FT	370	4,158	3.4	6.7	8.4	39.4	44.5	
Industrial	564,000 SQ FT	1,944	21,939	20.8	55.7	47.0	217.9	244.8	
Mixed Use	263,500 SQ FT	2,989	27,613	21.8	43.2	55.7	259.2	292.2	
Cultural/Educational	301,000 SQ FT	977	10,236	8.4	16.0	20.7	95.6	107.5	
Cultural	33,500 SQ FT	297	3,119	2.3	4.9	6.2	29.1	32.8	
Open Space	46.5 ACRES	457	4,738	3.4	6.1	9.4	43.3	48.7	
Total		12,686	130,637	108.6	207.6	264.3	1,252.9	1,415.6	
Exceedance				28.6	127.6	184.3			
DEVELOPMENT PATTERN FOR 2025									
SF and Duplex	800 UNITS	3,218	33,861	19.4	36.8	67.3	248.6	261.1	
Live/Work	500 UNITS	1,508	15,466	8.8	16.8	30.7	113.6	119.0	
Above Commercial	500 UNITS	1,508	15,466	8.8	16.8	30.7	113.6	119.0	
R&D	311,600 SQ FT	1,630	18,319	11.0	26.0	37.0	133.6	139.7	
Industrial	1,135,000 SQ FT	3,212	36,250	26.7	85.5	77.5	283.3	296.2	
Mixed Use	650,000 SQ FT	7,373	68,113	38.0	93.7	137.2	496.5	510.6	
Cultural/Educational	459,500 SQ FT	1,489	15,583	9.2	21.4	31.4	112.4	116.0	
Cultural	95,500 SQ FT	828	8,665	4.5	11.9	17.5	62.5	64.5	
Open Space	141.5 ACRES	1,066	11,041	5.4	12.0	21.9	77.0	79.1	
Total		21,832	222,764	131.9	320.9	451.2	1,641.1	1,705.2	
Exceedance				51.9	240.9	371.2			

Notes: VMT = vehicle miles traveled. ROC = reactive organic compounds. NOx = nitrogen oxides. CO = carbon monoxide. PM₁₀ = inhalable particulate matter.

Net trip generation reflects adjustments for transit use, nonvehicular modes, transportation control programs, and internal trips between reuse plan land uses. Vehicle emission rates have been derived from the EMFAC7F vehicle emission rate model using a mix of trip types, trip distances and speeds, vehicle operating modes, and vehicle types. Emission rates for home-based trip types reflect a vehicle mix with 1 percent heavy trucks. Emission rates for other trip types reflect a heavy truck fraction appropriate for the land use (7.2 percent for commercial uses, 17.5 percent for industrial uses, and 1 percent for open space). See Appendix B-Air Quality for complete methodology and assumptions.

Bold numbers indicate an exceedance of significance thresholds (80 pounds [36 kg] a day for ROC, NOx, and PM₁₀).

* Total daily vehicles trips are the ratio of total daily person trips (DPT) and total daily vehicle trips (DVT) (see Table 4.1-2). For this project the ratio is 100:37/DPT:DVT.

PM₁₀ emissions include a retrained roadway dust component based on the BAAQMD recommended factor of 1.52 lbs/1,000 VMT (0.69 g/VMT).

Although the quantity of emissions is considered to be a significant unmitigable impact, the added emissions are not expected to cause any change in Federal or state air quality attainment designations. The Bay Area Clean Air Plan, the Bay Area's regional component of the California state implementation plan, estimates that regional emissions of ozone precursors are more than 500 tons (453 metric tons) per day for both reactive organic compounds and nitrogen oxides. The addition of ozone precursor emissions would not cause any measurable change in the location, magnitude, or frequency of high ozone concentrations.

The vehicle emissions analysis already assumes a substantial amount of ridesharing, transit use, and nonvehicular travel modes, which would be met by implementing the TDM mitigation strategy outlined in Section 4.1. Major features of the mitigation strategy include the following:

- Form a Hunters Point TMA, consisting of property owners and tenants. Establish a coordinating committee, including representatives of the CAC, Agency staff, and representatives from the San Francisco Department of Parking and Traffic, MUNI, and the San Francisco Department of Public Works.
- Prepare a TSMP containing the following elements: provisions for convenient transit pass sales; transit, bicycle, and pedestrian information; employee transit subsidies; transit demand monitoring and required service expansions; secure bicycle parking; and parking management guidelines.
- Make a good faith effort to assist the Port of San Francisco and others in ongoing studies to examine the feasibility of expanding regional ferry service.
- Encourage local hiring practices to fill new jobs at HPS.

Because the effectiveness of this TDM program, which would reduce air quality effects attributable to project operations, cannot be predicted with certainty, the impact would still be considered significant.

Impact 2: PM₁₀ Emissions from Increased Traffic. Vehicle travel associated with the Proposed Reuse Plan would result in an increase in traffic-related PM₁₀ for the Proposed Reuse Plan at 2010 and 2525. As Table 4.2-2 shows, PM₁₀ emissions would exceed the BAAQMD impact significance threshold of 80 pounds (36 kg) a day by about 184.3 pounds (83.6 kg) a day in 2010 and by about 371.2 pounds (168.7 kg) a day in 2025. This vehicle emissions analysis already assumes a substantial amount of ridesharing, transit use, and nonvehicular travel modes, as described in TDM measures outlined for ozone precursor

emissions. Because the effectiveness of these measures is not known, the impact still would be considered significant.

Impact 3: Toxic Air Contaminants from Stationary, Mobile, and Cumulative Sources. Toxic air contaminant emissions could be generated under the Proposed Reuse Plan from several stationary sources, such as research uses, boilers and emergency generators, and industrial and retail uses. Because the precise nature of these stationary sources has not been determined, their emissions cannot be effectively estimated.

For comparison, according to the University of California San Francisco's (UCSF) Long Range Development Plan EIR, the existing carcinogenic risk posed by UCSF research-related toxic air contaminant emissions at Parnassus Heights would be 0.54 chances in 1 million. This risk is based on a 70-year lifetime of continuous exposure to a maximally exposed individual living near Parnassus Heights (Radian Corporation, 1994). Parnassus Heights has about 760,000 gross square feet (70,600 gross square m) of research space, compared to 312,000 gross square feet (29,000 gross square m) of research use and other activities possible under the Proposed Reuse Plan. An example of toxic air contaminant emissions from an industrial electronic and aerospace research and development facility is the Santa Barbara Research Corporation. A health risk assessment of that facility estimated a cancer risk of 2 in 1 million (Santa Barbara County Air Pollution Control District, 1996).

BAAQMD considers toxic air contaminant emissions from an individual stationary source to be significant if the health risk to a maximally exposed individual would exceed a cancer risk of 10 in 1 million or U.S. EPA guidance levels for noncarcinogenic toxic air contaminants. In analyzing health risks from individual facilities, BAAQMD does not require considering emissions from surrounding facilities. Therefore, cumulative emissions from multiple facilities could exceed the acceptable exposure level for an individual facility. For a local plan significance analysis, BAAQMD recommends establishing a buffer zone around existing and proposed land uses to ensure a less than significant impact. However, BAAQMD guidelines do not provide guidance to assess buffer adequacy. It is assumed that regardless of buffer size, if cumulative emissions from all stationary sources developed by implementing the Proposed Reuse Plan met the significance criteria for an individual facility, then impacts from plan uses would be less than significant.

Vehicle trips generated under the Proposed Reuse Plan would cause motor vehicle exhaust and evaporative emissions, known mobile sources of toxic air contaminants. There is no standard for evaluating the significance of mobile source emissions of toxic air contaminants. In the absence of a definitive significance determination, the impact of toxic air contaminants from vehicle travel associated with the

Proposed Reuse Plan is conservatively assumed to be at least potentially significant.

There are no accepted standards to assess cumulative toxic air emission impacts of all potential stationary and mobile sources of toxic air emissions related to the Proposed Reuse Plan. In addition, there is no protocol for evaluating the significance of mobile and stationary source emissions together. Development in San Francisco and throughout the Bay Area could further contribute to cumulative toxic air contaminant emissions and their resulting risks. Only sources relatively close to one another would likely result in direct, substantial cumulative exposure and risk because toxic air contaminant concentrations attenuate substantially with distance. However, all toxic air contaminant sources would likely contribute to ambient conditions in the Bay Area.

Under BAAQMD CEQA Guidelines, a project with a significant air quality impact would automatically have a significant cumulative air quality impact. As discussed above, emissions from mobile sources could be significant. Because it is unknown whether the project could, by itself, pose a significant impact, this analysis conservatively assumes that the project's cumulative impact could be significant with respect to combined stationary and mobile toxic air contaminant sources.

The following mitigation measures would reduce, but not eliminate, toxic air contaminant emissions, and this impact would remain significant. To reduce toxic air contaminant emissions from stationary sources only, the Agency would evaluate and permit all potential stationary sources of toxic air contaminants allowed at HPS as one facility and allow new potential stationary sources only if the estimated incremental toxic air contaminant health risk from all stationary sources at HPS is consistent with BAAQMD significance criteria for an individual facility. These criteria require that, for the maximally exposed individual, the estimated incremental health risk from toxic air contaminants not exceed 10 in 1 million for carcinogens or U.S. EPA's guidance levels for noncarcinogens. Reformulating gasoline and diesel fuel are projected to reduce toxic air contaminants from mobile sources. Also, the trip reduction measures discussed under ozone precursor and PM_{10} emissions from increased traffic would further reduce toxic air contaminant emissions.

Significant and Mitigable Impact

Impact 1: Airborne Dust from Construction and Demolition. Building demolition, renovation, and construction activities have the potential for generating dust. Construction, renovation, and demolition activities under the Proposed Reuse Plan would occur incrementally over an extended build-out period, making it impossible to estimate specific numbers for any particular year. Buildings proposed for

demolition would be remediated as described in Section 4.7, Hazardous Materials and Waste, prior to demolition activities.

The Sedway study included in Appendix B identifies market-driven development phases associated with reuse. Each phase would include some demolition and construction activities and would lead to additional employment and/or housing development. In this way, construction and demolition activities at HPS are expected to occur incrementally, and the inconveniences and impacts associated with construction would be spread out in terms of time and location.

Mitigation 1. BAAQMD officials consider PM_{10} emissions from construction sites to be potentially significant. They recommend focusing effort on developing effective and comprehensive PM_{10} control measures rather than detailed emissions quantification, primarily because the mitigation measures, if adopted, would reduce temporary construction PM_{10} impacts to a less than significant level, and therefore monitoring would not be required. As conditions of construction contracts, contractors would be required to implement BAAQMD guidelines for controlling particulate emissions at construction sites. BAAQMD guidelines are summarized below:

- Seed and water all unpaved, inactive portions of the lot or lots under construction to maintain a grass cover if they are to remain inactive for long periods during building construction.
- Halt all clearing, grading, earthmoving, and excavating activities during periods of sustained strong winds (hourly average wind speeds of 25 mph [40 km per hour] or greater).
- Water or treat all unpaved active portions of the construction site with dust control solutions, twice daily, to minimize windblown dust and dust generated by vehicle traffic. (City Ordinance 175-95 requires that nonpotable water be used for this purpose.)
- Sweep paved portions of the construction site daily or as necessary to control windblown dust and dust generated by vehicle traffic. Sweep streets adjacent to the construction site as necessary to remove accumulated dust and soil.
- Cover trucks carrying loose soil or sand before they leave the construction site, and limit on-site vehicle speeds to 15 mph (24 km per hour) or lower in unpaved construction areas.
- Limit the area subject to excavation, grading or other construction activity at any one time. Cover on-site storage piles of loose soil or sand.

Implementing these measures would reduce this impact to a less than significant level.

Less Than Significant Impacts

Carbon Monoxide Emissions from Increased Traffic Congestion. BAAQMD guidelines suggest performing carbon monoxide analysis at congested intersections. Because the Third Street/Evans Avenue intersection would experience significant delay under the Proposed Reuse Plan, the CALINE4 model was used to estimate future carbon monoxide levels. Carbon monoxide levels at Third Street and Evans Avenue would not exceed the Federal or state 8-hour carbon monoxide standard of 9 ppm (see Table 4.2-3). Therefore, traffic added by the Proposed Reuse Plan is not expected to create any carbon monoxide hot spot problems. No mitigation is required.

Consistency with BAAQMD Air Quality Plan and the City Air Quality Element. The state CEQA guidelines normally require a finding of significant impact if a project conflicts with adopted environmental plans or goals. The Proposed Reuse Plan would be consistent with many of the land use and transportation objectives and policies contained in the BAAQMD Air Quality Plan and the San Francisco General Plan Air Quality Element.

The Proposed Reuse Plan provides for mixed use and interspersed residential, commercial, and retail uses to minimize travel distances for work and shopping trips. The Proposed Reuse Plan also includes a balanced, multimodal transportation system that accommodates transit, automobiles emphasizing ridesharing, pedestrians, and bicycles. Although the Proposed Reuse Plan is consistent with the various policies contained in the Air Quality Element of the San Francisco General Plan, the specific land use pattern in the Proposed Reuse Plan has not been incorporated into the regional air quality plan prepared by BAAQMD and ABAG. However, Federal and state legislation requires periodically updating adopted regional air quality management plans. Because required updating provides a mechanism for addressing changing land use and transportation plans, this issue is not considered a significant impact. No mitigation is required.

Reduced Development Alternative

Significant Unmitigable Impacts

Impact 1: Ozone Precursor Emissions from Increased Traffic. As for the Proposed Reuse Plan, the Reduced Development Alternative would result in ozone precursor emissions considered significant according to BAAQMD significance criteria. Table 4.2-4 summarizes vehicle emissions associated with the Reduced Development Alternative.

Under this alternative, nitrogen oxide emissions in 2010 (99.5 pounds [45 kg] a day) would be about half of those projected under the Proposed Reuse Plan (207.6 pounds [94.1 kg] a day) but would still exceed the BAAQMD significance threshold of 80 pounds (36 kg) a day. These emissions already assume a substantial amount of

**TABLE 4.2-3:
SUMMARY OF CARBON MONOXIDE DISPERSION MODELING RESULTS**

	PEAK 1-HOUR CARBON MONOXIDE CONCENTRATION (ppm)				PEAK 8-HOUR CARBON MONOXIDE CONCENTRATION (ppm)			
	Proposed Reuse Plan 2010	Proposed Reuse Plan 2025	Reduced Development 2010	Reduced Development 2025	Proposed Reuse Plan 2010	Proposed Reuse Plan 2025	Reduced Development 2010	Reduced Development 2025
NW of Evans and Third Street	8.7	12.1	6.1	6.8	6.5	9.0	4.6	5.1
SW of Evans and Third Street	8.2	10.3	6.4	6.7	6.1	7.7	4.8	5.0
NE of Evans and Third Street	8.3	10.9	5.8	6.3	6.2	8.1	4.3	4.7
SE of Evans and Third Street	8.4	11.5	6.2	6.9	6.3	8.6	4.6	5.1
NW of Palou and Third Street	5.4	5.5	5.3	5.3	4.0	4.1	4.0	4.0
SW of Palou and Third Street	5.8	5.7	5.7	5.6	4.3	4.3	4.3	4.2
NE of Palou and Third Street	5.5	5.6	5.3	5.3	4.1	4.2	4.0	4.0
SE of Palou and Third Street	5.6	5.5	5.5	5.4	4.2	4.1	4.1	4.0
NW of Innes and Donahue	4.8	4.7	4.6	4.5	3.6	3.5	3.4	3.4
NE of Innes and Donahue	4.8	4.8	4.6	4.6	3.6	3.6	3.4	3.4
SW of H Street and Spear	4.4	4.4	4.4	4.4	3.3	3.3	3.3	3.3
SE of H Street and Spear	4.7	4.6	4.5	4.4	3.5	3.4	3.4	3.3

Notes: ppm = parts per million, by volume

Modeling results were generated using the CALINE4 dispersion model and EMFAC7F emission rates for the appropriate calendar year.

Modeled receptor locations are 50 feet from the centerlines of the intersecting roadways.

Emissions from extended vehicle idling at congested intersections are included in the modeling analysis.

Modeling analyses assumed poor dispersion conditions (moderate temperature inversion [stability class E], 2.2 mph wind speed, 50-meter mixing height limit, and 10 degree wind direction fluctuation parameter), with wind directions varied in 10 degree increments.

A background carbon monoxide value of 4 ppm has been added to the peak 1-hour modeling results.

Peak 8-hour carbon monoxide concentrations are estimated as 74.6 percent of the peak 1-hour concentration (the average ratio of peak 8-hour and peak 1-hour concentrations at the Arkansas Street monitoring station (see Table 3.2-2).

Federal carbon monoxide standards are 35 ppm for a 1-hour average and 9 ppm for an 8-hour average.

California carbon monoxide standards are 20 ppm for a 1-hour average and 9 ppm for an 8-hour average.

Appendix B, Air Quality, provides calculations and assumptions for CO modeling

**TABLE 4.2-4:
SUMMARY OF EMISSIONS FROM VEHICLE TRAVEL
ASSOCIATED WITH THE REDUCED DEVELOPMENT ALTERNATIVE**

Land use	Amount of Development	Daily Vehicle Trips	Daily VMT Estimate	Average Summer Weekday Traffic-related Ozone			Average Weekday Exhaust Plus Tire Wear PM ₁₀ Emissions (pounds per day)		Average Weekday Traffic-related Carbon Monoxide Emissions (pounds per day)	
				Precursor Emissions (pounds per day)	ROC	NOx	PM ₁₀ Emissions (pounds per day)	Summer	Winter	
DEVELOPMENT PATTERN FOR 2010										
SF and Duplex	300 UNITS	1,207	12,700	10.5	16.2	25.2	122.7	139.3		
Live/Work	65 UNITS	196	2,009	1.6	2.6	4.0	19.4	22.0		
R&D	30,000 SQ FT	199	2,248	1.8	3.6	4.5	21.3	24.1		
Industrial	280,000 SQ FT	1,311	14,807	13.7	37.6	31.7	147.1	165.2		
Mixed Use	130,000 SQ FT	1,475	13,635	10.8	21.4	27.5	128.0	144.3		
Cultural/Educational	150,000 SQ FT	486	5,087	4.2	7.9	10.2	47.5	53.4		
Cultural	15,000 SQ FT	286	2,994	2.2	4.7	6.1	28.0	31.4		
Open Space	40.8 ACRES	420	4,355	3.1	5.6	8.6	39.8	44.8		
Total		5,580	57,835	47.9	99.5	117.8	553.7	624.6		
Exceedance					19.5	37.8				
DEVELOPMENT PATTERN FOR 2025										
Total SF and Duplex	300 UNITS	1,207	12,700	7.3	13.8	25.2	93.2	97.9		
Live/Work	100 UNITS	302	3,107	1.8	3.4	6.1	22.8	23.9		
R&D	100,000 SQ FT	621	6,981	4.1	9.9	14.1	50.9	53.2		
Industrial	550,000 SQ FT	1,911	21,578	15.5	50.9	46.1	168.7	176.3		
Mixed Use	300,000 SQ FT	3,403	31,439	17.6	43.2	63.4	229.2	235.7		
Cultural/Educational	300,000 SQ FT	729	7,630	4.5	10.5	15.4	55.0	56.8		
Cultural	45,000 SQ FT	797	8,352	4.2	11.5	16.8	60.3	62.2		
Open Space	135.8 ACRES	1,030	10,701	5.2	11.6	21.3	74.6	76.7		
Total		10,000	102,488	60.2	154.7	208.4	754.8	782.7		
Exceedance					74.7	128.4				

Notes: VMT = vehicle miles traveled. ROC = reactive organic compounds, NOx = nitrogen oxides, CO = carbon monoxide, PM₁₀ = inhalable particulate matter. Net trip generation reflects adjustments for transit use, nonvehicular modes, transportation control programs, and internal trips between reuse plan land uses. Vehicle emission rates derived from the EMFAC7F vehicle emission rate model using a mix of trip types, trip distances and speeds, vehicle operating modes, and vehicle types. Emission rates for home-based trip types reflect a vehicle mix with 1 percent heavy trucks. Emission rates for other trip types reflect a heavy truck fraction appropriate for the land use (7.2 percent for commercial uses, 17.5 percent for industrial uses, and 1 percent for open space). **Bold numbers indicate exceedance of significance thresholds (80 pounds [36 kg] a day for ROC, NOx, and PM₁₀).**

ridesharing, transit use, and nonvehicular transit as outlined for the Proposed Reuse Plan. However, because the effectiveness of the TDM measures is not known, the impact still would be considered significant.

Impact 2: PM₁₀ Emissions from Increased Traffic. As for the Proposed Reuse Plan, vehicle travel associated with the Reduced Development Alternative would result in an increase in traffic-related PM₁₀ in 2010 and 2025. As shown in Table 4.2-4, PM₁₀ emissions would exceed the BAAQMD impact significance threshold of 80 pounds (36 kg) a day by about 37.8 pounds (17.2 kg) a day in 2010 and by about 128.4 pounds (58.2 kg) a day in 2025. These emissions already assume a substantial amount of ridesharing, transit use, and nonvehicular transit, as outlined for the Proposed Reuse Plan.

These PM₁₀ emissions would be less than those projected under the Proposed Reuse Plan (117.8 pounds [53.4 kg] a day in 2010 and 208.4 pounds [94.5 kg] a day in 2025 under the Reduced Development Alternative compared to 264.3 pounds [119.9 kg] a day in 2010 and 451.2 pounds [204.7 kg] a day in 2025 under the Proposed Reuse Plan), and could be reduced through implementation of the TDM measures identified for the Proposed Reuse Plan. However, because the effectiveness of these measures is not known, the impact still would be considered significant.

Impact 3: Toxic Air Contaminants from Stationary, Mobile, and Cumulative Sources. As described under the Proposed Reuse Plan, industrial operations at HPS would create new stationary sources of toxic air contaminant emissions. The Reduced Development Alternative would result in a maximum buildout of 100,000 gross square feet (9,300 gross square m) of research and development use, compared to 312,000 gross square feet (29,000 gross square m) under the Proposed Reuse Plan. In addition, vehicle trips generated under the Reduced Development Alternative would cause motor vehicle exhaust and evaporative emissions, known mobile sources of toxic air contaminants. There is no standard for evaluating the significance of mobile source emissions of toxic air contaminants. In the absence of a definitive determination of significance, the impact of toxic air contaminants from vehicle travel associated with the Reduced Development Alternative is conservatively assumed to be at least potentially significant. Because it is unknown whether the project could, by itself, present a significant impact, this analysis further conservatively assumes that the Reduced Development Alternative's cumulative impact could be significant with respect to combined stationary and mobile sources of toxic air contaminants.

To reduce toxic air contaminant emissions from stationary sources only, the Agency would evaluate and permit all potential stationary sources of toxic air contaminants allowed at HPS as one facility and allow new potential stationary sources only if the estimated incremental toxic air contaminant health risk from all stationary sources at HPS is consistent with BAAQMD significance criteria for an individual facility. These criteria require that, for the maximally exposed individual, the estimated incremental health risk from toxic air contaminants not exceed 10 in 1 million for carcinogens or U.S. EPA's guidance levels for noncarcinogens. Reformulating gasoline and diesel fuel are projected to reduce toxic air contaminants from mobile sources. Also, the trip reduction measures discussed under ozone precursor and PM₁₀ emissions from increased traffic would further reduce toxic air contaminant emissions. Implementing these measures would reduce, but not eliminate, toxic air contaminant emissions, and this impact would remain significant.

Significant and Mitigable Impacts

Impact 1: Airborne Dust from Construction and Demolition. As described under the Proposed Reuse Plan, building demolition, renovation, and construction activities have the potential for generating dust. These activities would occur incrementally over an extended build-out period, making it impossible to estimate specific numbers for any particular year. Construction-generated dust would result in a potentially significant and mitigable impact that could be reduced to a less than significant level by implementing dust control measures.

Mitigation 1. Mitigation would be the same as for Mitigation 1 described for the Proposed Reuse Plan.

Less Than Significant Impacts

Carbon Monoxide Emissions from Increased Traffic Congestion. As shown in Table 4.2-3, carbon monoxide levels under the Reduced Development Alternative in both 2010 and 2025 would not exceed the Federal and state 8-hour carbon monoxide standard of 9 ppm. Therefore, this would be a less than significant impact. No mitigation is required.

Consistency with BAAQMD Air Quality Plan and the City Air Quality Element. As under the Proposed Reuse Plan, the Reduced Development Alternative would be consistent with many of the land use and transportation objectives and policies contained in the BAAQMD Air Quality Plan and the San Francisco General Plan Air Quality Element. Therefore, this would be a less than significant impact. No mitigation is required.

**4.2.3 No Action
Alternative**

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could continue existing leases (see Appendix C). Retaining HPS in caretaker status under the No Action Alternative is not a Federal agency action subject to Clean Air Act conformity determination requirements. No air quality impacts are anticipated. No mitigation is required.

4.3 NOISE

Due to the attenuation of noise levels with distance from the noise source, the ROI for noise impacts is the South Bayshore planning area. A more localized ROI is appropriate for some discrete noise sources.

Noise impacts would be significant if an alternative would result in any of the following:

- A substantial project-related noise level increase in an urban setting that substantially affects the use or enjoyment of adjacent noise-sensitive lands (i.e., residential, medical, educational, or recreational uses).
- Temporary noise levels in excess of limits set by the San Francisco Noise Ordinance.

A summary of noise impacts is presented in Table 4.3-1.

TABLE 4.3-1: SUMMARY OF NOISE IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
On-site traffic noise (east of Donahue Street)	○	○	◐	◐
On-site traffic noise (west of Donahue Street)	○	○	◐	◐
On-site traffic noise (Lockwood Avenue)	○	○	◐	◐
Off-site traffic noise	○	○	◐	◐
Noise associated with construction and demolition	○	○	◐	◐
Noise/land use compatibility conflicts	○	○	◐	◐

Legend:

Significant Impact, Unmitigable



Significant Impact, Mitigable



Less Than Significant Impact



No Impact



4.3.1 Navy Disposal

The disposal of Federal property at HPS out of Federal ownership would not result in any direct noise impacts. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.3.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

The Proposed Reuse Plan would result in increased noise from stationary and mobile (traffic) sources, including truck traffic (see Section 4.1, Transportation, Traffic, and Circulation). These impacts are analyzed, along with the potential for new receptors to be exposed to existing high noise levels. Where noise impacts are quantified, they represent project plus cumulative conditions, because background growth in traffic volumes is assumed. Cumulative conditions considering reuse combined with remediation activities are discussed in Chapter 5.

Significant and Mitigable Impact

Impact 1: On-site Traffic Noise (East of Donahue Street). Traffic noise levels have been modeled for representative on-site locations at HPS. Modeling results for the Proposed Reuse Plan are presented in Table 4.3-2. The modeling analyses assumed a high truck traffic component for both surface street and freeway traffic but assumed that site remediation was complete.

Properties within 100 feet (30 m) of the roadway centerline of Donahue Street would be exposed to Community Noise Equivalent Levels (CNEL) levels above 65 on the "A-weighted" decibel scale (dBA) at build-out of the Proposed Reuse Plan in 2025. These noise levels would have a significant and mitigable impact on residential properties proposed for development on the east side of Donahue Street.

Mitigation 1. To reduce noise impacts on proposed residential properties east of Donahue Street, orient and design new or renovated buildings such that future noise intrusion would be minimized to within acceptable levels. In addition, comply with the San Francisco Building Code's noise insulation standards for new residential construction. Physical barriers also could be constructed to reduce noise transmission to these residential areas. Implementing these measures would reduce this impact to a less than significant level.

Less Than Significant Impacts

On-site Traffic Noise (West of Donahue Street). Increased traffic levels are predicted to raise CNEL levels west of Donahue Street to above 65 dBA. However, land uses proposed for these areas are primarily research and development. This type of development is not considered a noise-sensitive use, and therefore noise impacts would be less than significant. If sensitive equipment is proposed within these developments, it is assumed to be housed in appropriate enclosures and protected from ambient noise and vibration. No mitigation is required.

TABLE 4.3-2: SUMMARY OF TRAFFIC NOISE MODELING RESULTS

General Location	Distance from Centerline (feet)	MODELED CNEL LEVEL (dBA) BY REUSE PLAN									
		No Action (Without Project)				Proposed Reuse Plan				Reduced Development	
		2010	2025	2010	2025	Increase Above 2010 No Action Conditions	Increase Above 2025 No Action Conditions	2010	2025	Increase Above 2010 No Action Conditions	Increase Above 2025 No Action Conditions
North of Innes Avenue ¹ , west of HPS	100	59.6	59.7	67.1	68.5	7.5	8.8	63.9	65.5	4.3	5.8
	150	57.9	58.1	64.7	66.1	6.8	8	61.6	63.2	3.7	5.1
	200	57	57.3	63.0	64.4	6	7.1	60.2	61.6	3.2	4.3
	300	56.1	56.4	60.9	62.2	4.8	5.8	58.5	59.8	2.4	3.4
	400	55.5	55.8	59.6	60.8	4.1	5	57.4	58.6	1.9	2.8
South of Innes Avenue ¹ , west of HPS	500	55.2	55.5	58.7	59.8	3.5	4.3	56.8	57.8	1.6	2.3
	100	59.6	59.8	67.1	68.5	7.5	8.7	63.9	65.5	4.3	5.7
	150	58	58.2	64.7	66.1	6.7	7.9	61.6	63.2	3.6	5
	200	57.1	57.4	63.1	64.4	6	7	60.2	61.7	3.1	4.3
	300	56.2	56.5	61.0	62.3	4.8	5.8	58.6	59.8	2.4	3.3
West of Donahue Street ² , within HPS	400	55.8	56.2	59.8	60.9	4	4.7	57.6	58.8	1.8	2.6
	500	55.6	56	59.0	60.0	3.4	4	57.1	58.1	1.5	2.1
	100	56.9	57.1	63.6	65.3	6.7	8.2	60.2	62.0	3.3	4.9
	150	55.7	56	61.6	63.2	5.9	7.2	58.5	60.2	2.8	4.2
	200	55.2	55.4	60.4	61.9	5.2	6.5	57.6	59.1	2.4	3.7
East of Donahue Street ² , within HPS	300	54.6	54.9	59.1	60.5	4.5	5.6	56.6	58.0	2	3.1
	400	54.5	54.8	58.4	59.7	3.9	4.9	56.2	57.4	1.7	2.6
	500	54.4	54.7	58.1	59.3	3.7	4.6	56.0	57.2	1.6	2.5
	100	56.8	57	63.5	65.2	6.7	8.2	60.1	62.0	3.3	5
	150	55.5	55.8	61.5	63.1	6	7.3	58.3	60.0	2.8	4.2
South of Lockwood Avenue ³ , within HPS	200	54.9	55.1	60.2	61.8	5.3	6.7	57.3	58.9	2.4	3.8
	300	54.1	54.4	58.7	60.1	4.6	5.7	56.1	57.5	2	3.1
	400	53.7	54	57.8	59.2	4.1	5.2	55.4	56.8	1.7	2.8
	500	53.4	53.8	57.2	58.5	3.8	4.7	55.0	56.2	1.6	2.4
	100	53	53.3	58.0	59.9	5	6.6	55.5	56.4	2.5	3.1
South of Lockwood Avenue ³ , within HPS	150	52.5	52.9	56.6	58.4	4.1	5.5	54.4	55.4	1.9	2.5
	200	52.4	52.7	55.9	57.5	3.5	4.8	53.9	55.0	1.5	2.3
	300	52.2	52.6	55.2	56.7	3	4.1	53.5	54.7	1.3	2.1
	400	52.2	52.6	55.0	56.5	2.8	3.9	53.4	54.6	1.2	2
	500	52.3	52.6	55.0	56.4	2.7	3.8	53.4	54.6	1.1	2

¹ Transects located 1,219 feet west of Donahue Street (mid-point of modeled road segment entering HPS).

² Transects located 568 feet north of Innes Avenue (mid-way between Innes and Lockwood Avenues).

³ Transect located 1,316 feet east of Donahue (mid-way between Donahue and Spear Streets).

Notes: Traffic noise was modeled using the Federal Highway Administration traffic noise prediction model, California vehicle noise emission levels, and hourly distributions of car and truck traffic representative of freeways and arterial highways. Modeled traffic speeds were adjusted according to hourly volume/capacity ratios. Modeling results include noise contributions from the entire modeled roadway network, not just road segments in the immediate vicinity of the receptor transects.

On-site Traffic Noise (Lockwood Avenue). Increased traffic levels under the Proposed Reuse Plan are predicted to raise CNEL levels along Lockwood Avenue by as much as 6.6 dBA. These increased noise levels would not be significant to proposed residential development associated with the mixed-use area south of Lockwood Avenue, because projected noise levels in both 2010 and 2025 would remain below 60 dBA and are not significant.

Off-site Traffic Noise. Implementing the Proposed Reuse Plan would increase traffic levels along the Evans Street/Innes Avenue corridor, the major access route to HPS. (It is estimated that 80 percent of project traffic would access HPS via the North Gate, with the remaining 20 percent using Crisp Gate.) Future noise levels along Innes Avenue without the project are expected to be below 60 dBA in both 2010 and 2025. With implementation of the Proposed Reuse Plan, about 1,672 additional automobiles and 144 additional trucks are projected in the A.M. peak hour and about 1,960 additional automobiles and 88 additional trucks in the P.M. peak hour along this route by 2025. This additional traffic would be expected to increase CNEL levels at land uses fronting Innes Avenue by 7 to 8 dBA. Locations within 150 feet (45 m) of the roadway centerline would experience CNEL levels above 65 dBA. However, existing commercial and industrial properties fronting Innes Avenue are not noise-sensitive land uses. Residential properties on the south side of Innes Avenue, 500 feet (152 m) or further from the roadway centerline, would experience noise levels 60 dBA or less in 2010 and 2025. These noise levels are within the normally acceptable range for residential uses and are therefore considered less than significant.

Access to HPS at Crisp Gate would increase traffic levels along Griffith Street and Carroll Avenue by about 20 percent by 2025 (an increase of about 418 automobiles and 36 trucks in the A.M. peak hour and an increase of about 490 automobiles and 22 trucks in the P.M. peak hour). However, this traffic increase would occur along an established truck route that runs through heavy and light industrial areas that are not noise sensitive. Off-site traffic noise would result in a less than significant noise impact. No mitigation is required.

Noise Associated with Construction and Demolition. Construction and demolition activities have the potential for causing temporary disturbance to adjacent land uses. Occupied residences within 300 feet (90 m) of construction or demolition sites (or within 600 feet [180 m] of pile-driving sites) could experience temporary disturbance from construction noise.

Table 4.3-3 summarizes heavy equipment noise estimates for typical construction sites. If multiple items of heavy equipment operate in

**TABLE 4.3-3:
TYPICAL CONSTRUCTION SITE NOISE IMPACTS**

Receptor Distance (feet)	Noise Level Increment per Unit (dBA)					Combined Equipment Noise (dBA)	Work Day CNEL Increment ¹ (dBA)
	Bulldozer	Loader	Backhoe	Jack Hammer	Truck	Daytime	
50	85.0	80.0	83.0	90.0	85.0	95.2	90.5
100	78.9	73.9	76.9	83.8	79.0	89.1	84.3
200	72.7	67.8	70.8	77.4	72.9	82.8	78.0
400	66.2	61.5	64.5	70.5	66.7	76.2	71.4
600	62.2	57.7	60.7	66.2	63.0	72.1	67.4
800	59.3	54.9	57.9	62.9	60.3	69.1	64.3
1,000	56.9	52.6	55.6	60.1	58.1	66.6	61.8
1,500	52.2	48.3	51.3	54.5	54.1	61.8	57.1
2,000	48.6	45.1	48.1	50.0	51.2	58.2	53.4
2,500	45.5	42.4	45.4	46.0	48.7	55.2	50.5
3,000	42.8	40.1	43.1	42.3	46.7	52.7	47.9
4,000	38.0	36.0	39.0	35.7	43.2	48.6	43.8
5,280	32.7	31.7	34.7	28.0	39.6	44.3	39.6
7,500	24.6	25.3	28.3	15.7	34.4	38.6	33.8
9,000	19.6	21.4	24.4	7.9	31.3	35.3	30.5
10,560	14.6	17.6	20.6	0.1	28.4	32.2	27.4

Sources: U.S. Environmental Protection Agency, 1971; Gharabegian et al., 1985; Acoustical Society of America, 1978.

¹ Evening and night periods of zero noise levels are taken into account in the calculation of the work-day CNEL increment.

Notes: Combined equipment noise level and CNEL increment calculations assume one bulldozer, two front-end loaders, one backhoe, two jackhammers, and two heavy trucks operating concurrently in proximity to each other over an 8-hour work day.

Distance attenuation calculations include minimum atmospheric absorption rates of 0.229 dBA/100 feet for bulldozers, 0.152 dBA/100 feet for front-end loaders and backhoes, 0.415 dBA/100 feet for jackhammers, and 0.098 dBA/100 feet for heavy trucks.

Atmospheric absorption rates were calculated from source spectrum data over a range of temperature and humidity conditions; minimum absorption rates (cool temperatures and high humidity) were used for noise calculations. Except for sounds with highly distinctive tonal characteristics, noise from a particular source is not identifiable when its incremental noise level contribution is significantly less than background noise levels.

proximity to each other, daytime noise levels could exceed 80 dBA within 100 to 200 feet (30 to 60 m) of the work site.

Construction requiring pile driving would affect a more extensive area. Pile-driving equipment generates a highly disturbing impulsive noise, with average noise levels of about 97 dBA and peak noise levels above 110 dBA at 50 feet (15 m). Over an 8-hour work day, CNEL increments would exceed 70 dBA for locations within about 600 feet (180 m) of pile-driving sites.

Construction noise impacts would be reduced to acceptable levels by restricting most construction activity to normal daytime periods and requiring compliance with the San Francisco Noise Ordinance. Nighttime construction activities would require special permits to comply with the San Francisco Noise Ordinance. This would be a less than significant impact. No mitigation is required.

Noise/Land Use Compatibility Conflicts. Industrial operations can create noise problems for adjacent noise-sensitive land uses. A potential juxtaposition of concern is combining planned mixed-use areas with industrial activities at Drydock 4. However, the Proposed Reuse Plan generally provides spatial separation and buffer areas to minimize noise problems from industrial operations. The San Francisco building code includes standards for noise insulation that would be met by new residential construction. In addition, the San Francisco Noise Ordinance is an enforcement mechanism that would limit noise impacts from construction activities and stationary sources. Therefore, land use compatibility conflicts would be less than significant. No mitigation is required.

Reduced Development Alternative

Significant and Mitigable Impacts

Impact 1: On-site Traffic Noise (East of Donahue Street). As shown in Table 4.3-2, properties within 100 feet (30 m) of the roadway centerline of Donahue Street would be exposed to CNEL levels of about 62 dBA at build-out of the Reduced Development Alternative in 2025. These noise levels would have a significant and mitigable impact to residential properties proposed for development along the east side of Donahue Street.

Mitigation 1. Mitigation would be the same as Mitigation 1 described for the Proposed Reuse Plan.

Less Than Significant Impacts

On-site Traffic Noise (West of Donahue Street). Under the Reduced Development Alternative, the CNEL levels west of Donahue Street would reach approximately 62 dBA. These noise levels are considered

less than significant to the industrial uses fronting the western portion of Donahue Street. No mitigation is required.

On-site Traffic Noise (Lockwood Avenue). Under the Reduced Development Alternative, CNEL levels along Lockwood Avenue would remain below 60 dBA. These noise levels are considered less than significant to both industrial and mixed-use developments along Lockwood Avenue. No mitigation is required.

Off-site Traffic Noise. Project-related traffic noise under the Reduced Development Alternative would be on average 3 dBA less than levels projected under the Proposed Reuse Plan in 2025. Commercial and industrial properties adjacent to Innes Avenue would experience noise levels slightly above 65 dBA; however, these land uses are not noise sensitive. Residential properties set back 300 feet (90 m) or more from the south side of Innes Avenue would experience noise levels well below 60 dBA. Traffic accessing Crisp Gate would travel along Griffith Street and Carroll Avenue, an established truck route that runs through heavy and light industrial areas that are not noise-sensitive uses. Therefore, off-site traffic noise would have a less than significant noise impact. No mitigation is required.

Noise Associated with Construction and Demolition. As described under the Proposed Reuse Plan, construction and demolition noise impacts under the Reduced Development Alternative would be less than significant. No mitigation is required.

Noise/Land Use Compatibility Conflicts. The potential for land use compatibility conflicts under the Reduced Development Alternative would be less than those discussed for the Proposed Reuse Plan, because less intense development is proposed. No mitigation is required.

4.3.3 No Action Alternative

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could continue existing leases (see Appendix C). No noise impacts are anticipated, and no mitigation is required.

4.4 LAND USE

The ROI for land use is HPS and the South Bayshore planning area. Impacts to land use would be significant if an alternative would result in any of the following:

- Conflict with established residential, recreational, educational, or scientific uses in the area.
- Disrupt or divide the established land use configurations.
- Conflict with existing plans and policies for surrounding land uses.

Table 4.4-1 provides a summary of land use impacts and their significance.

TABLE 4.4-1: SUMMARY OF LAND USE IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Alteration of present land use	○	○	⊖	⊖
Juxtaposition of planned and existing land uses	○	○	⊖	⊖
Juxtaposition of HPS uses and adjacent areas	○	○	⊖	⊖
Provision of public open space	○	○	⊖	⊖
Consistency with plans and policies	○	○	○	○

Legend:

Significant Impact, Unmitigable ●

Significant Impact, Mitigable ⊖

Less Than Significant Impact ⊖

No Impact ○

4.4.1 Navy Disposal

The disposal of Federal property at HPS out of Federal ownership would not result in any direct changes to land use. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.4.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Proposed land uses through 2010 would include residential, open space, and mixed-use projects on the northern, central, and western portions of HPS. Residential development of 800 units would be concentrated on 30 acres (12 ha) in the hilltop area of HPS, and

500 additional residential units would be dispersed throughout the mixed-use areas. Open space would border the residential area along the hillside. Industrial, maritime/industrial, mixed use (including live/work space), open space, and educational/cultural/historic uses would be in the central portion of HPS. Most of the HPS northern shoreline would be developed for research and development and mixed use or would be left as open space (Figure 4.4-1).

Table 4.4-2 summarizes development by land use category at 2010 and 2025.

TABLE 4.4-2: LAND USES FOR THE PROPOSED REUSE PLAN

LAND USE	POTENTIAL GROSS SQUARE FEET YEAR 2010	POTENTIAL GROSS SQUARE FEET YEAR 2025
Industrial	385,000	775,000
Maritime Industrial	175,000	360,000
Research & Development	65,000	312,000
Cultural/Education	335,000	555,600
Mixed Use	570,000	1,150,000
Live/Work (in Mixed Use Areas)	300,000 (300 units)	500,000 (500 units)
Residential	1,300,000 (1,300 units)	1,300,000 (1,300 units)

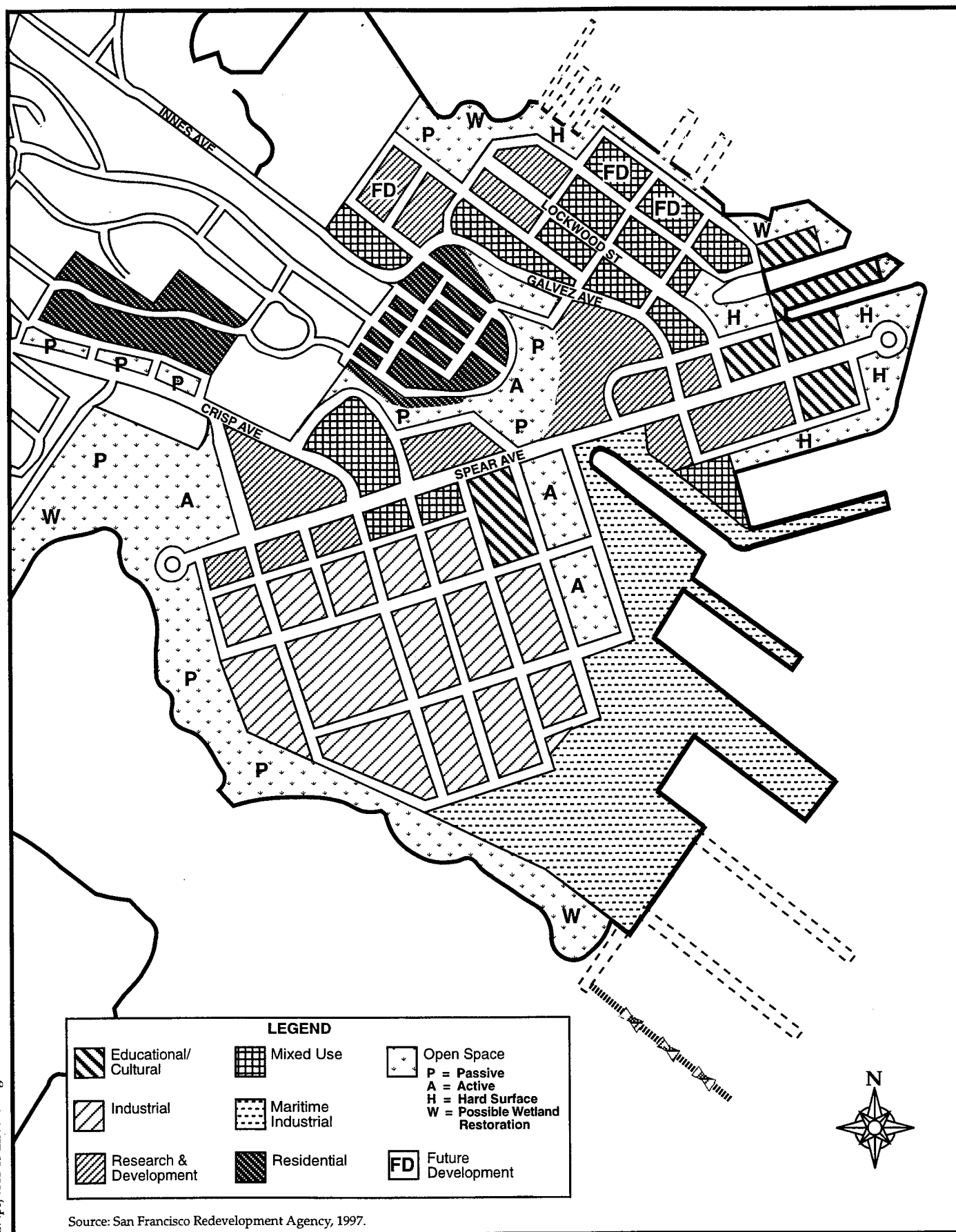
Source: Sedway, 1995; Conrad, 1998.

Notes:

- (1) Residential units and live/work units are assumed to average 1,000 square feet per unit.
- (2) Under the Proposed Reuse Plan, residential units include 800 single family and duplex dwelling units and 500 apartments over commercial space.
- (3) "Mixed use" includes live/work units.
- (4) Live/work and residential units are given in rounded numbers.

The difference between 2010 and 2025 build-out is the number of developments that would be built for research and development, mixed-use, industrial, and maritime industrial uses. The increase in density between 2010 and 2025 would occur on the northern and central portions of HPS. The mixed-use area along Lockwood Street in the northern portion of HPS would be compatible with similar areas in the neighborhood.

The hilltop residential area would be completed by 2010. Expanded mixed-use development between 2010 and 2025 would be along the northeast side of Galvez Avenue and would be bordered by a research and development area. The east end of Spear Avenue would include open space and cultural development.



Research and development areas along the north side of Spear Avenue would be implemented with mixed use toward the northeast corner of Spear and Crisp Avenues. Mixed use extending south of Spear Avenue would continue. Mixed use would include ground floor commercial space, some upper floor live/work uses, and upper level office space. Mixed use would be adjacent to the south side of Spear Avenue. Industrial uses would extend farther south toward the southern open space. The active open space south of Spear Avenue along Cochrane Street would include recreational uses toward the water. Educational uses (possibly job training) are planned at Spear Avenue and Hussey Street.

Objectives and policies contained in the *Land Use Alternatives and Proposed Draft Plan, Hunters Point Shipyard Land Use Plan* (City and County of San Francisco, Planning Department and San Francisco Redevelopment Agency, 1997a) define the land use goals for HPS. Many of the objectives and supporting policies are designed to avoid land use impacts from HPS reuse and are summarized below to identify components of the Proposed Reuse Plan intended to ensure land use compatibility.

Objective 1: Land Use

Develop a balanced neighborhood of businesses, cultural facilities, housing, community services, educational facilities, open space, and recreational facilities that minimizes land use conflicts and is integrated into the Bayview- Hunters Point neighborhood.

- Policy 3: Avoid conflicts between housing and industrial areas.
- Policy 5: Ensure that new uses are compatible with existing Bayview-Hunters Point land uses.
- Policy 9: Provide a system of parks, open spaces, and recreational facilities that benefit HPS residents, workers, visitors, and other City residents and that provide linkages to open spaces outside HPS.

Objective 4: Commerce and Industry

Improve the viability of existing HPS businesses, including its artist community.

- Policy 4: Ensure that interim uses at HPS are consistent with and do not detract from long-term development of the site.

Objective 5: Residence

Guide and encourage the development of well-designed new residential areas at HPS that assist in meeting the City's housing needs.

- Policy 1: Link the patterns of new neighborhoods into the existing residential community on Hunters Point Hill.
- Policy 2: Provide for neighborhood security through housing orientation, housing design, and adequate street lighting.
- Policy 8: Provide opportunities and incentives for well-designed live/work housing that ensures high standards of interior environmental health and safety in areas of HPS where this will not impede industrial or commercial growth and operation.

Objective 10: Urban Design and Preservation

Create and emphasize an urban pattern that is based on and enhances the site's natural features and that provides a sense of integration with the adjacent San Francisco pattern.

- Policy 2: Integrate the site's open space system with adjacent existing open space, such as the Bay Trail.

Objective 12: Urban Design and Preservation

Conserve and enhance historic resources that provide continuity with the community's history and culture.

- Policy 2: Consider the preservation and potential adaptive reuse of historic buildings and structures around Drydocks 2 and 3 as a focus of the arts/cultural and mixed-use district.
- Policy 3: Consider the preservation and potential adaptive reuse of the large crane on the regunning pier.
- Policy 4: Consider the preservation and adaptive reuse of all or of primary portions of the "green glass" building (Navy Building 253).
- Policy 5: Consider the preservation and potential adaptive reuse of Drydock 4.
- Policy 6: Apply the nationally established and locally adopted Secretary of the Interior's Standards for Treatment of Historic Properties (U.S. Department of the Interior, 1992) for the reuse of all buildings designated on the National Register of Historic Places and any other standards as set forth in state or San Francisco legislation.

- Policy 7: Encourage and facilitate the repair and use of HPS waterfront for a range of water-related activities and maintain visual and physical access to these activities.
- Policy 8: Encourage retention of usable, safe, and economically viable flexible-use structures on HPS as consistent with interim use and phasing plans.
- Policy 9: With the exception of historic and significant structures noted above, allow for the demolition of nonessential, non-economically viable unsafe structures, especially as part of logical site preparation and remediation by the Navy before conveyance of the site to San Francisco.

Objective 15: Recreation and Open Space

Establish a network of active and passive open spaces and public places on HPS that are exemplary in their design quality and their ability to invite and welcome a diverse population and range of activities.

- Policy 2: Provide a waterfront plaza adjacent to and integral with the cultural/arts mixed-use area.
- Policy 4: Provide a corridor for the Bay Trail close to the Bay shoreline and linking up with the regional Bay Trail alignments to the north and south.
- Policy 7: Consider the development of a small boat harbor/marina with the potential for future ferry and water taxi service linking HPS with other shoreline areas in the City and Bay Area.
- Policy 12: Provide maximum public access and use of the waterfront.

Less Than Significant Impacts

Alteration of Present Land Use. Implementing the Proposed Reuse Plan would introduce additional businesses and residences to HPS and would result in some changes in land use. The primary change would be from vacant, industrial land to open space, research and development, mixed-use, educational/cultural, and active industrial uses. More specific land use changes can be seen by comparing Figures 3.4-2 and 3.4-3 to Figure 4.4-1. The overall land use changes would reflect the increased activity at HPS, bringing HPS more in line with activities and densities experienced elsewhere in urban San Francisco.

Impacts on occupied buildings could be expected due to renovation and removal of some buildings and the changes in land uses

surrounding these buildings. Land use changes to specific buildings resulting from implementing the Proposed Reuse Plan would create a more cohesive and planned use of HPS land. Planned land use changes and the potential intensification of use would fulfill major objectives of the Proposed Reuse Plan but would not be considered significant environmental impacts. No mitigation is required.

Juxtaposition of Planned and Existing Land Uses. If the Navy's disposal action takes the form of a phased or early transfer, there is a possibility that land uses under the Proposed Reuse Plan could coexist for a time with existing or interim land uses that would not remain after build-out. The most obvious juxtaposition of concern is that of planned residential and open space uses with ongoing remediation activities. (This juxtaposition would result in potentially significant human and ecological exposure to hazardous materials and is addressed separately in Section 4.7.) Other potential juxtapositions of concern include combining planned educational and cultural uses with existing industrial uses north of the North Pier area and combining planned mixed-use areas with industrial activities at Drydock 4. Determining whether these juxtapositions would result in significant nuisance or exposure impacts would require more specific data regarding planned uses. While these potential impacts are not expected to be significant, given Agency oversight and plan objectives, additional evaluation may be warranted as specific proposals are considered for these areas.

Juxtaposition of HPS Uses and Adjacent Areas. Implementing the Proposed Reuse Plan in areas along the land-side (northwestern) boundary of HPS could transform existing land uses into new land uses. These areas of HPS are currently vacant, residential, and open space areas, with small pockets of industrial, commercial, and Navy administration uses (Figure 3.4-2). These areas generally would be designated for similar land uses: residential, open space, and research and development (Figure 4.4-1). Intensifying use within these categories, particularly within the residential and research and development areas, would be noticeable to residents and businesses outside the HPS gates. In the areas north and south of the Crisp Avenue Gate, planned open space would serve as a buffer between existing residential uses and proposed research and development uses and between existing industrial uses and proposed residential uses along the border. The juxtaposition of HPS uses and adjacent areas would not be considered a significant environmental impact because of this buffering, because of the similar nature of land uses involved, and because land use intensification within HPS is expected as part of reuse. No mitigation is required.

Provision of Public Open Space. Public access to HPS is currently controlled. Implementing the Proposed Reuse Plan would increase

open space areas available to the public, including about 141.5 acres (58 ha) of planned open space by 2025. This amount of open space (estimated at 1 acre [0.4 ha] for every 28 persons in year 2025) would be a substantial addition to the HPS and Bayview-Hunters Point areas and would be considered an overall beneficial impact. No mitigation is required.

Reduced Development Alternative

The types of development activities under the Reduced Development Alternative would be the same as described for the Proposed Reuse Plan but at reduced density (Table 4.4-3).

TABLE 4.4-3: LAND USE – REDUCED DEVELOPMENT ALTERNATIVE

LAND USE	POTENTIAL GROSS SQUARE FEET YEAR 2010	POTENTIAL GROSS SQUARE FEET YEAR 2025
Industrial	192,000	377,000
Maritime Industrial	88,000	173,000
Research & Development	30,000	100,000
Cultural/Education	165,000	345,000
Mixed Use	130,000	300,000
Live/Work (in mixed-use areas)	65,000 (65 units)	100,000 (100 units)
Residential	300,000 (300 units)	300,000 (300 units)

Source: Sedway, 1995; Conrad, 1998.

Notes:

- (1) Residential and live/work units are assumed to average 1,000 square feet per unit.

Less Than Significant Impacts

Although less intense development would occur under the Reduced Development Alternative, the land use impacts would be the same as those identified for the Proposed Reuse Plan.

4.4.3 Consistency with Plans and Policies

San Francisco General Plan

The Proposed Reuse Plan may be incorporated into the City's General Plan in the form of a new Area Plan. Conforming amendments to the urban design, arts, and other City-wide elements are not anticipated but may be required to reflect incorporation of the HPS area into the General Plan framework. In addition, a number of maps included in various General Plan Elements would need to be revised, including Land Use and Density maps in the Residence and Commerce and Industry Elements; Open Space Plan and Eastern Shoreline Plan maps in the Recreation and Open Space Element; vehicular street and pedestrian network maps in the Transportation Element; City Pattern,

Height Guidelines and Bulk Guidelines maps; and Protected Residential Areas maps in the Community Facilities Element. All of these map amendments would reflect changes resulting from new land use designations related to the HPS Area Plan; none would change designations for other areas of San Francisco. On the whole, proposed land uses and land use policies contained in the reuse plan ordinance would be compatible with City policy.

San Francisco Bay Plan and Seaport Plan

Under the Federal Coastal Zone Management Act (CZMA), Federal projects or activities must be consistent to the maximum extent practicable with the provisions of the Federally approved state coastal management program (which includes the Bay Plan and Seaport Plan). In 1996, the Bay Conservation and Development Commission (BCDC) approved revisions to the Bay Plan land use designations at HPS, reducing the port priority designation to 55 acres (22 ha), as shown on Figure 3.4-4.

A consistency determination is required under the CZMA to ensure that the Navy's disposal of HPS is consistent to the maximum extent practicable with the BCDC management program (BCDC, 1998). The consistency determination will be submitted by the Navy and completed before the NEPA Record of Decision (ROD) is issued. Following HPS disposal, Agency projects within BCDC's jurisdiction may require additional BCDC permits.

State Tide Lands Trust

The Proposed Reuse Plan contains several categories of land use, some of which are consistent with Public Trust restrictions and others that may not be consistent. Maritime industrial and open space uses are consistent. Compatibility in mixed-use and other areas would depend on the specific uses involved. Where nontrust uses are proposed, they would require definition as "interim" uses of short duration or removal of the trust restrictions by agreement with the State Lands Commission (SLC) and substitution of other areas for trust uses.

The SLC and the Agency are working to complete a land exchange at HPS to terminate the Public Trust on inland property no longer needed for Public Trust purposes. In exchange, lands that are near or along the water and of equal value and not now subject to the Public Trust will be made trust lands. The SLC and the Agency are expected to enter into a memorandum of understanding describing the steps and approvals to complete the exchange (SLC, 1998).

4.4.4 No Action Alternative

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could

continue existing leases (see Appendix C). No land use impacts are expected, and no mitigation is required.

4.5 VISUAL RESOURCES AND AESTHETICS

The ROI for visual resources includes HPS, surrounding residential and industrial areas, and San Francisco Bay, as well as more distant hillsides, waterfront areas, and areas with prominent views of the site.

Impacts to visual resources and aesthetics would be significant if an alternative would result in any of the following:

- Development, density, or intensity of use substantially out of character with existing visual resources.
- Visually intrusive development when viewed from distant viewpoints.

Table 4.5-1 summarizes potential impacts to visual resources and aesthetics.

**TABLE 4.5-1:
SUMMARY OF VISUAL RESOURCES AND AESTHETICS IMPACTS**

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Increased development	○	○	⊕	⊕
Increased hill area density	○	○	⊕	⊕
Increased intensity of use	○	○	⊕	⊕

Legend:

Significant Impact, Unmitigable

Significant Impact, Mitigable

Less Than Significant Impact

No Impact



4.5.1 Navy Disposal

Navy disposal would not result in any direct changes to visual resources at HPS. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.5.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

The Proposed Reuse Plan contains urban design concepts and guidelines intended to preserve and enhance view corridors, preserve architecturally and visually significant buildings and industrial structures, encourage landscaping, provide on-site parks and open space, enhance streetscapes, and provide waterfront access/open space preservation and enhancement. In addition, the Proposed Reuse Plan proposes to renovate and revitalize run-down structures, establish public overlooks on Hunters Point Hill, and open new waterfront areas to public use. Conformance with the urban design

concepts and guidelines contained in the Proposed Reuse Plan also are assumed in the Reduced Development Alternative. Implementing the following draft Urban Design and Preservation objectives and policies would lessen the Proposed Reuse Plan's potential impacts on visual quality and would have a positive impact on the aesthetics of HPS by improving its overall visual character.

Urban Design and Preservation

Objective 10. Create and emphasize an urban pattern that is based on and enhances the site's natural features and provides a sense of integration with the adjacent San Francisco pattern.

- Policy 2: Integrate the site's open space system with adjacent existing open space, such as the Bay Trail.
- Policy 4: Apply building height limits to maintain visual access to the waterfront, encourage moderate urban densities in mixed-use areas, accentuate the natural topography of the site, and highlight signature features of important public/cultural buildings.
- Policy 5: Develop a hierarchy of open spaces to serve workers, residents, and visitors.

Objective 11: Create an attractive and distinctive visual character for HPS that respects and enhances the natural features, history, and vision for mixed-use site development oriented towards arts and industrial uses.

- Policy 1: Establish distinctive urban neighborhoods meeting residential and commercial needs within natural geographical boundaries on the site.
- Policy 2: Protect and enhance major views to and from the site's open spaces, its streets, Hunters Point Hill, and the water's edge.
- Policy 3: Encourage architecture, landscaping, and public art design that enhances the distinctive character of HPS.
- Policy 5: Encourage development of the site in a way that enhances its identity and visibility from surrounding areas.

Design Guidelines

The *Design for Development* outlines the design objectives for HPS and contains the development standards and urban design guidelines that apply to all construction at the site and, where applicable, to

rehabilitation of existing structures (see Section 2.2.1 and Appendix D) (City and County of San Francisco, Planning Department and the San Francisco Redevelopment Agency, 1997c). These design guidelines and standards are the tools used to implement the Proposed Reuse Plan's urban design policies.

Overall design objectives for the entire site, as well as design guidelines for specific visual areas at HPS, are identified in the *Design for Development*. For example, guidelines for the hilltop residential area call for a moderate-density residential neighborhood with development organized to maximize views to the water and to accentuate the hill form without disrupting the urban pattern when viewed from other areas. In particular, the highest development densities and heights would be at the top of the hill (73 units/acre [180 units/ha] with a 50-foot [15-m] maximum height limit), whereas lower density and height limits (29 units/acre [72 units/ha] with a 32-foot [10-m] maximum height) would be required on the sides of the hill.

Specific features of the *Design for Development* include limitations on height and bulk, housing density, area coverage, off-street parking and loading, and open space (Appendix D). A maximum 60-foot (18-m) height limit would apply to much of the proposed research and development land uses along Spear Street. Proposed mixed-use development in the northeastern portion of HPS and along the south side of Spear Avenue would be subject to a 50-foot (15-m) height limit, whereas most of the residential area would be subject to 40-foot (12-m) height restrictions.

Bulk standards, which specify the maximum physical dimensions of upper stories of new buildings, would comply with Article 2.5 of the City Planning Code. For example, in buildings with a maximum height limit of 50 to 60 feet (15 to 18 m), development over 40 feet (12 m) would have a maximum plan dimension length of 110 feet (33.5 m) and a maximum diagonal dimension of 125 feet (38 m).

Less Than Significant Impacts

Increased Development. Implementing the Proposed Reuse Plan would increase the amount of development in the northern, eastern, and central areas of HPS. The impact would be less than significant because building height and size limits identified in the *Design for Development* for HPS would be to a scale consistent with structures currently at HPS, preserving long-range views from the hilltop residential area to the north, east, and south. Urban design concepts in the Proposed Reuse Plan, which encourage landscaping and recommend enhancing natural features (Objectives 10 and 11), would further improve short-range views. No mitigation is required.

Increased Hill Area Density. Views from the existing residential area would be preserved by lower density development near the bluffs. Hilltop residential development would not be particularly visible from HPS because of the hilltop topography, and the placement of smaller scale buildings near the bluffs would minimize visual obstructions. Long-range views would be minimally affected because the height and bulk of development would be designed to protect views by requiring lower building heights at the edge of the hill and higher heights at the top of the hill. In addition, landscaping would be incorporated into the planned design. Therefore, there would be no significant impact to visual resources and aesthetics from increased hilltop development. No mitigation is required.

Increased Intensity of Use. An increase in intensity of use and in the number of structures at HPS under the Proposed Reuse Plan could alter the appearance of HPS from distant viewpoints. However, this impact would be less than significant because development guidelines incorporated in the Proposed Reuse Plan would serve as guidance to control building height and density to conform to existing HPS patterns. For example, Proposed Reuse Plan Policy 4 under Objective 10 specifically advocates applying building height limits to maintain visual access and accentuate natural topography. In addition, the *Design for Development* proposes limiting building heights to two to five stories, consistent with current building heights at HPS.

By 2025, the Proposed Reuse Plan would intensify development of the northern and central areas over 2010 levels. Between 2010 and 2025, passive open space acreage would be substantially increased. Development, including demolition and construction, would occur at a scale compatible with existing structures. Urban design policies set forth in the Proposed Reuse Plan encourage a change to the existing visual character of the proposed mixed-use areas similar to neighborhood commercial areas throughout the City. Upper-story housing or live/work spaces would be above a variety of ground-floor commercial uses. Building height would be limited to two to five stories, with a maximum height of 60 feet (18 m). Maintaining views and public access to the water would be a high priority. This change in the visual character of HPS would be consistent with the City's neighborhood commercial orientation.

Implementing the proposed street plan would provide improved view corridors to the water and HPS hillside areas. Providing additional views could benefit the aesthetics of HPS.

Urban design policies in the Proposed Reuse Plan encourage building height limits to maintain visual access to the waterfront, moderate urban densities in mixed-use areas, accentuating the natural

topography of the site, and highlighting significant features of important public/cultural buildings. Implementing these policies would enhance the existing visual features of HPS.

Residential development on the hill area would be at a higher density than formerly at HPS. This would be consistent with the visual character and development of the adjacent South Bayshore area. The variety of proposed residential and other structures would enhance visual resources and would be consistent with the surrounding residential uses. Therefore, the increase in intensity of use and in the number of structures at HPS would not have a significant impact on visual resources and aesthetics. No mitigation is required.

Reduced Development Alternative

Less Than Significant Impacts

Visual impacts under this alternative would be similar to those identified for the Proposed Reuse Plan and would result from demolition and construction activities. However, proposed construction activities under this alternative would be substantially reduced from those under the Proposed Reuse Plan.

As with the Proposed Reuse Plan, the most noticeable visual effect would be the residential development of the hill area by 2010. However, fewer units (up to 300) would be developed on the hill under this alternative than under the Proposed Reuse Plan (up to 800). For the other areas of HPS, there would be some increase in density (primarily in the central and northern portions) between 2010 and 2025 under this alternative. As described above under the Proposed Reuse Plan, potential impacts related to increased development, increased density on the hilltop, and increased intensity of use would be less than significant. No mitigation is required.

4.5.3 No Action Alternative

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could continue existing leases (see Appendix C). No impacts to visual resources and aesthetics are expected, and no mitigation is required.

4.6 SOCIOECONOMICS

The ROI for socioeconomics is the South Bayshore planning area, also referred to as the Bayview-Hunters Point neighborhood of San Francisco. Socioeconomic impacts would be considered significant if an alternative would result in substantial changes in population, housing, or employment that affect existing residents, businesses, schools, or other services.

The significance of socioeconomic impacts is related to the social and economic characteristics of the region. Both reuse alternatives would result in new employment and income growth within the South Bayshore planning area. In general, the more jobs and income generated, the more beneficial the socioeconomic effects that may occur.

Population and housing growth are the natural consequences of employment growth in a region and are considered neither beneficial nor adverse impacts of the disposal and reuse actions. Population and housing growth can be perceived either positively or negatively, depending on the values and point-of-view of those considering the impacts. Growth in the housing supply is considered beneficial in the context of current regional and City-wide housing needs. However, population and housing growth could lead to secondary impacts that could be adverse, such as potential traffic and infrastructure improvements that growth might induce. These secondary impacts are discussed in Section 5.5, Growth-Inducing Impacts. Population growth can also result in additional demand for services, such as public schools. Additional enrollment, if it would result in school overcrowding, is considered adverse.

Table 4.6-1 provides a summary of potential socioeconomic impacts and their level of significance.

TABLE 4.6-1: SUMMARY OF SOCIOECONOMIC IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Population	○	○	①	①
Housing	○	○	①	①
Employment	○	○	①	①
Schools	○	○	①	①

Legend:

Significant Impact, Unmitigable ●

Significant Impact, Mitigable ◐

Less Than Significant Impact ①

No Impact ○

4.6.1 Navy Disposal

The disposal of Federal property at HPS out of Federal ownership would not result in any direct socioeconomic impacts. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.6.2 City of San Francisco Reuse Alternatives***Proposed Reuse Plan*****Less Than Significant Impacts**

Population. The total population increase associated with the Proposed Reuse Plan would be approximately 3,610 persons by 2010 and an additional 290 persons (for a total population increase of approximately 3,900) by 2025. This estimate is based on the following assumptions: (1) an average household size of 3.0 for single family houses and duplexes; (2) an average household size of 1.5 for live/work and apartment units; and (3) new housing developed as described below under Housing. This population growth is generally desired by the community, is consistent with local plans and policies, and is accounted for in ABAG's projected population increases; therefore, this would be a less than significant impact. No mitigation is required.

Housing. Less than significant impacts on housing are anticipated under the Proposed Reuse Plan. At present, there are no habitable housing units at HPS. Under the Proposed Reuse Plan, new housing units constructed at HPS by 2010 would include 300 live/work units, 500 apartments above commercial units, and 800 single-family houses and duplexes. Between 2010 and 2025, an additional 200 live/work units would be constructed, bringing the total of live/work units to 500 and the total of new households at HPS to 1,800. These housing units would be constructed on land that is vacant and underutilized at

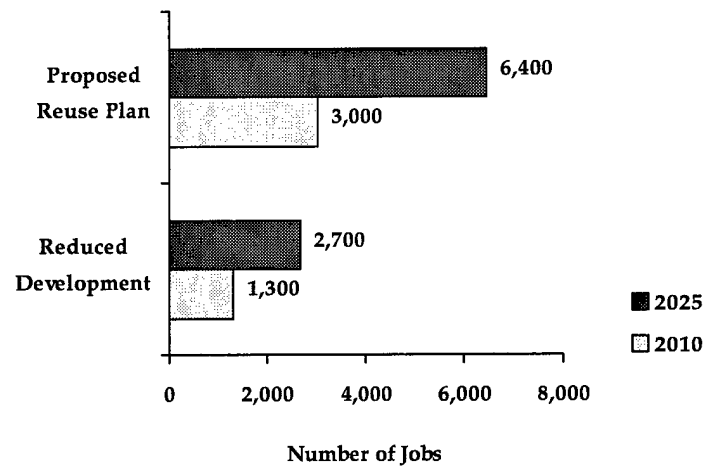
present. The presence of new households in the Bayview-Hunters Point neighborhood could help to stimulate desired economic growth in the community's commercial areas.

Housing affordability is a pervasive problem, not only in the South Bayshore planning area, but throughout San Francisco and the entire Bay Area (ABAG, 1993). An objective of the HPS redevelopment plan is to provide for the development of mixed-income housing. A goal of the Proposed Reuse Plan is to make 15 percent of the new housing units affordable to low- or moderate-income households. In order to help ensure that this goal is achieved, the City intends to provide low-cost sites and/or reduced financing costs to developers for construction of affordable housing at HPS.

Criteria for determining eligibility for affordable housing were established by the Department of Housing and Urban Development (HUD) in combination with City-wide median income statistics. "Affordable" units are targeted at households earning between 60 percent and 100 percent of the City-wide median income. In 1990, the median income in six of the eight South Bayshore planning area census tracts was below the City-wide median. In census tract 231, which contains almost a third of the South Bayshore planning area population, the median household income (\$15,089) was less than half of the City-wide figure (\$33,413). However, census tracts 230 and 610, where the median household income exceeded the City-wide median in 1990, contain a combined total of almost 40 percent of the South Bayshore planning area population (U.S. Department of Commerce, 1993).

Therefore, it is likely that local residents would qualify to purchase the affordable units, or even the market-rate units, to be constructed at HPS under the Proposed Reuse Plan. No mitigation is required.

Employment. Under the Proposed Reuse Plan, employment opportunities in the South Bayshore planning area would increase and would be considered beneficial effects on the South Bayshore planning area (Figure 4.6-1).

FIGURE 4.6-1: PROJECTED HPS EMPLOYMENT INCREASES

Source: Sedway & Associates, 1995.

ABAG (1998a) projects that employment in the Bayview-Hunters Point community will increase by 4,221 jobs (12 percent) between 2000 and 2010. Potential employment generated by the Proposed Reuse Plan by 2010 (3,000 jobs) would represent the majority of these new jobs. The additional projected job growth that would occur between 2010 and 2025 (3,400 new jobs) would represent an increase of 9 percent above the 2010 projected employment level (39,148) and would be considered an additional local economic benefit.

The Proposed Reuse Plan reflects recent employment growth trends in San Francisco and the Bay Area of small businesses, arts, education, and cultural activities. Small start-up firms could be expected users of HPS in mixed-use space planned for the northern waterfront (Sedway & Associates, 1995).

Based on regional and national business trends, the types of businesses most likely to be attracted to HPS would include printing and publishing, trucking and courier services, wholesalers, food products, motion picture production, and medical supplies and equipment. Citizen input during revision of the South Bayshore Area Plan stressed the importance of job and business growth in the area, particularly for African-American residents (City and County of San Francisco Planning Department, 1995d).

The Proposed Reuse Plan includes opportunities to bring job training and placement programs tailored to employment opportunities at HPS directly into the South Bayshore planning area. In cooperation with the Citizens Advisory Committee (CAC), Agency staff drafted a "First Source Referral" program that could provide clear incentives to HPS

businesses to hire locally. Businesses leasing space at HPS in the future would have the opportunity to participate in this program. By agreeing to use the City's employment and training system as the first source of referral for job opportunities created as a result of their HPS leases, business owners would qualify for partial reimbursement of the salaries paid to locally hired individuals. Lease holders would be required to file information annually with the City pertaining to job creation and place of residence of employees.

Market analysis concluded that it would be possible to attract approximately 460,000 square feet (42,735 square m) of education and training facilities to the HPS eastern waterfront in the 30-year build-out period (Sedway & Associates, 1995). No mitigation is required.

Schools. Under the Proposed Reuse Plan, the total number of school-aged children in the South Bayshore planning area would increase because of the addition of school-aged children living at HPS. ABAG projects that by 2010, 18.3 percent of the population in the South Bayshore planning area will be school-aged children (ABAG, 1998a). If 18.3 percent of the projected population at HPS in 2010 is assumed to be school-aged, approximately 661 new students could be added to the San Francisco Unified School District (SFUSD) by 2010, if all of these students elect to attend public school. In 2025, an additional 53 new students could be added from HPS, for a total of 714 students associated with HPS.

While the addition of as many as 714 new students to the SFUSD would contribute to demand for school facilities, this impact is expected to be less than significant for several reasons. The total increase in school-aged children associated with the Proposed Reuse Plan represents only one percent of the district's current enrollment. In addition, the new students would be entering the district at a time when growth in this population segment is minimal. (ABAG projects that in the planning area, the number of school-aged children will increase by only 5 percent between 1990 and 2020 and by only 11 percent for the City as a whole during this same 30-year period [ABAG, 1998a]). In addition, because of Federally mandated busing in the SFUSD, as well as the policy that allows families to elect a school outside their attendance area, it is likely that many of the children at HPS would be bused to schools outside of the planning area. The additional school children would, therefore, be distributed throughout the SFUSD rather than just in the South Bayshore area. Furthermore, the actual impact on schools resulting from reuse is likely to be less than estimated, because more than half of the housing units that would be constructed at HPS would be live/work units and apartments over commercial space. These types of units (occupied by working artists or senior citizens) would more likely have fewer

children than the single-family units that are predominant at present in the Bayview-Hunters Point neighborhood. No mitigation is required.

Reduced Development Alternative

Less Than Significant Impacts

Population. Less than significant population impacts are projected under the Reduced Development Alternative. Assuming an average household size of 1.5 for live/work and apartment units and 3.0 for other residential uses, the population increase associated with the Reduced Development Alternative would be approximately 1,000 persons by 2010 and approximately 50 more persons by 2025, for a total population increase of 1,050. No mitigation is required.

Housing. Under the Reduced Development Alternative, new housing units constructed at HPS would include 65 live/work units and 300 single-family houses and duplexes for a total of 365 units. Between 2010 and 2025, an additional 35 live/work units would be constructed, bringing the total of live/work units to 100 and the total of new households at HPS to 400. Estimated total square footage for all housing units at complete build-out is 400,000 square feet (37,161 square m). Less than significant impacts on housing supply are projected under the Reduced Development Alternative. No mitigation is required.

Employment. Employment generated under the Reduced Development Alternative by 2010 (1,300 jobs) represents an increase of 3.8 percent over the current estimated number of jobs (34,785) in the South Bayshore planning area. The additional projected job growth for 2025 (1,400 new jobs) would be an increase of 3.0 percent above the projected 2010 employment base of 44,517. The increase in jobs associated with the Reduced Development Alternative would be a positive economic effect that would benefit current residents of the South Bayshore planning area. No mitigation is required.

Schools. The Reduced Development Alternative would add an estimated 183 school-aged children to the local population by 2010 and an additional 9 school-aged children (for a total of 192) by 2025. This would represent an increase of less than one percent over current SFUSD enrollment levels. As discussed for the Proposed Reuse Plan, the project would have a less than significant impact on schools. No mitigation is required.

4.6.3 No Action Alternative

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. No additional housing would be built on site, and there would be no resident population at HPS. However, under this

alternative, the Navy could possibly continue existing leases (see Appendix C). Navy caretaker and tenant employment would not be considered an adverse or beneficial impact. Population and job growth that is desired by Bayview-Hunters Point residents and the City would not be realized under this alternative. No mitigation is required.

4.7 HAZARDOUS MATERIALS AND WASTE

The ROI for hazardous materials and waste is the HPS property. Hazardous materials sites in the surrounding neighborhood are acknowledged in Section 3.7.6. Hazardous materials and waste impacts would be significant if an alternative resulted in any of the following:

- Uses for which agreed-upon remediation plans or programs would be insufficient to eliminate human health and ecological risks.
- Substantial increases in the storage, use, and disposal of hazardous materials associated with activities at HPS.
- Releases that result in exposing the public or the environment to hazardous substances in excess of applicable standards.

Reviewers should note that the goal of this EIS/EIR is not to assess the adequacy or impacts of the Navy's remediation actions as described in Section 3.7. Rather, the EIS/EIR analysis focuses on the possibility that disposal and reuse could result in impacts indirectly related to existing environmental conditions or proposed remediation, or that they could result in new hazardous materials impacts.

Prior to real property conveyance, the Navy must remediate hazardous substances to a level consistent with the protection of human health and the environment; or, if conveying contaminated property before completion of the required response actions under the applicable authority, the Navy must ensure that the property is suitable for conveyance for the use intended and that the intended use is consistent with the protection of human health and the environment. In either case, this determination is documented in a Finding of Suitability to Transfer (FOST). Future property recipients are advised and notified of the environmental condition of the property and, where appropriate, covenants, conditions, or restrictions are included in the deed to ensure protection of human health and the environment, taking into consideration the intended land uses.

Property affected by release or disposal of hazardous substances may be conveyed before all necessary remedial action has been completed if certain conditions for deferral of the covenant required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) § 120(h)(3)(A)(ii)(I) have been met. These conditions include the following:

- Agreement by the U.S. Environmental Protection Agency (U.S. EPA) and the state that the property is suitable for the intended

use and that the intended use will be protective of human health and the environment.

- Public notice and comment.
- Property use restrictions, if necessary, to ensure that human health and the environment are protected and that the necessary remedial actions can take place.
- Assurances from the Federal government that conveyance of the property will not substantially delay response actions at the property and that the necessary response actions will be completed after conveyance.

In circumstances other than a § 334 early transfer, contaminated or potentially contaminated properties cannot be conveyed until remediation is complete. However, the Department of Defense (DOD) has established a policy for leasing contaminated or potentially contaminated properties. The Navy, with regulatory participation, has prepared a basewide Finding of Suitability to Lease (FOSL) for HPS (U.S. Navy, 1998c). The FOSL documents environmental findings for Parcels B, C, D, E, and F and the suitability of the parcels for a Lease in Furtherance of Conveyance (LIFOC). The FOSL includes a summary of contamination and risk, presents lease notifications and restrictions necessary to preclude threats to human health and the environment, and ensures Navy access to the property to conduct final investigation and remediation of CERCLA- and non-CERCLA-regulated contamination.

Table 4.7-1 summarizes hazardous material and waste impacts and their significance.

**TABLE 4.7-1: SUMMARY OF IMPACTS FROM HAZARDOUS MATERIALS
AND WASTE**

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Human exposure to unremediated areas during routine use (prior to complete remediation)	○	○	● ¹	● ¹
Human exposure to contamination during construction activities (prior to complete remediation)	○	○	● ¹	● ¹
Human exposure to contamination during remediation activities	○	○	⊙	⊙
Ecological exposure to contamination during remediation activities	○	○	⊙	⊙
Human exposure to residual chemical constituents during routine use (after complete remediation)	○	○	● ¹	● ¹
Human exposure to residual chemical constituents during construction activities (after complete remediation)	○	○	●	●
Human exposure to previously unidentified subsurface hazards (after complete remediation)	○	○	● ¹	● ¹
Ecological exposure to residual chemical constituents during construction activities (after complete remediation)	○	○	●	●
Cross-contamination among water-bearing zones	○	○	●	●
Hazardous materials usage and generation	○	○	⊙	⊙
Hazardous materials management	○	○	⊙	⊙
Building renovation and demolition: ACM	○	○	⊙	⊙
Building renovation and demolition: PCBs	○	○	⊙	⊙
Building renovation and demolition: LBP	○	○	⊙	⊙

Legend:

Significant Impact, Unmitigable ●
 Significant Impact, Mitigable ●¹
 Less Than Significant Impact ⊙
 No Impact ○

¹ Denotes that the impact is significant and mitigable for CEQA purposes only. For NEPA purposes, the impact is less than significant, because existing regulations require protective measures.

- 4.7.1 Navy Disposal** The disposal of Federal property at HPS out of Federal ownership would not result in any direct impacts caused by hazardous materials or hazardous waste-related activities. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

- 4.7.2 City of San Francisco Reuse Alternatives** *Reuse Prior to Complete Remediation: Proposed Reuse Plan*
As described in Section 1.5, Navy Disposal Process, use of a LIFO and/or a § 334 early transfer could enable the City to begin reuse activities while remediation is being conducted, subject to restrictions in a FOSL or similar document. The potential impacts associated with these concurrent activities are addressed below.

Significant and Mitigable Impacts

Note: Impacts 1 and 2 are significant and mitigable under CEQA, but are less than significant under NEPA. The City and the Agency view the proposed mitigation measures for these impacts as a mitigation program that would require adoption by decision-makers and long-term monitoring. Similar controls would be implemented through the § 334 process, if early conveyance were pursued. These general controls and requirements would prevent unacceptable human health risks associated with routine reuse activities prior to remediation. The Navy considers these controls to be a regulatory requirement and therefore not mitigation. Thus, the implementation of the controls listed in Section 4.7 or any others relating to the impacts of hazardous waste occur pursuant to the Navy's IRP or other regulatory regimes, not the Navy's NEPA process. Therefore, under NEPA, these potential impacts are considered less than significant, and no mitigation is required.

Impact 1: Human Exposure to Unremediated Areas During Routine Use. During use that is consistent with the land use designation in the Proposed Reuse Plan, people who occupy portions of HPS prior to its complete remediation could be exposed to risks from unremediated sites, including vacant parcels with exposed soil that might contain contaminants. Unless properly managed, human exposure to contaminants in the soil or groundwater could occur through inhalation of vapors from petroleum products or related compounds that might have accumulated in the soils; from inhalation of soil particles or dust containing elevated concentrations of metals, polycyclic aromatic hydrocarbons (PAHs), or asbestos; or from direct contact with contaminants.

To address these potential impacts prior to remediation, the Navy would impose restrictions and notifications to support proposed uses. These restrictions would be imposed through the § 334 early transfer process or as conditions described in a basewide Finding of Suitability to Lease (FOSL) prior to entering into a LIFO. The restrictions would address two main requirements: 1) that the risk to human health and the environment is acceptable and 2) leasing the property will not interfere with environmental restoration activities.

(For simplicity, this assessment assumes that the Navy and Agency agree to a LIFO and that parcels would be conveyed in phases as they are remediated. If a § 334 early transfer were to be implemented instead, the terms "lease", "leasing", "lessee", "leased", and "FOSL" would be modified to reflect other mechanisms for implementing restrictions established in consultation with the State of California and the U.S. EPA.)

For the basewide FOSL, the human health risk was evaluated using parcel-specific human health risk assessments (HHRAs). If the HHRA for a given site indicated the health risk to be acceptable for industrial use only, basewide lease restrictions will be applied to the property to ensure that future uses by tenants are industrial. If the health risk was not acceptable for unrestricted industrial use, then building- or area-specific lease restrictions will be imposed, in addition to the basewide restriction, to limit potential exposure to contaminants. These restrictions will be specific to site conditions and include such things as prohibitions on trenching and use of groundwater. The Navy will include lease restrictions with right of access for all remediation activities, as well as some building- and area-specific restrictions and notifications for areas that will eventually be affected by remediation activities.

The HHRAs were used to identify specific lease restrictions necessary to minimize contaminant exposure prior to remediation. Based on a review of the HHRAs, the Navy concluded that HPS is suitable for industrial use if some lease restrictions on immediate reuse are imposed. For some areas, such as Parcel E, the interim lease would include restrictions on access.

Mitigation 1. Implement basewide restrictions on and notifications for leased areas (related to IR sites and areas of concern), as described below.

- Prohibit users from disturbing soil or conducting intrusive activities without prior Navy approval and coordination with Federal and state regulatory agencies. Prohibitions could include, but are not limited to, shoveling, digging, trenching, installing wells, and conducting subsurface excavations.
- Prohibit users from entering fenced-off areas, areas where environmental investigations are in progress, or areas where access is not authorized, as indicated by appropriate signs.
- Restrict access to fenced areas of Parcel E until remediation activities have been completed.

- Require users to maintain intact the current condition of all flooring and interior and exterior pavement and concrete in the lease area.
- Prohibit the use of groundwater at HPS for any purpose.
- Notify users that petroleum hydrocarbons and hazardous substances have been detected in the soil and groundwater at HPS.
- Notify users that investigation and remediation activities are ongoing at IR sites at HPS.
- Prohibit interference with ongoing environmental investigation and remediation activities.
- Restrict access to investigation and remediation areas.

Implementing these measures would reduce this impact to a less than significant level.

Impact 2: Human Exposure to Contamination During Construction Activities. It is likely that the City or others would from time to time need to excavate site soils to maintain or replace utilities, repair foundations, or make other sub-surface repairs. Skin contact with unremediated soil by construction workers, or inhalation of soils by workers or the public, could pose a human health risk. In addition, inadvertent releases of asbestos-containing material (ACM), lead-based paint (LBP), or polychlorinated biphenyls (PCBs) during routine renovation or repair could expose construction workers, occupants, or visitors to these hazardous materials, which, depending on the quantity of material, could result in adverse health effects.

Mitigation 2. The following precautionary measures would be implemented by the project proponent during necessary construction activities prior to remediation. These measures are general and would be refined based on site-specific information and consultation with regulatory agencies.

- Obtain site-specific information about soil or groundwater that would be disturbed through new testing or existing information from the Navy and consultation with regulatory agencies.
- Before disturbing soil or groundwater, or conducting intrusive activities such as shoveling, digging, trenching, installing wells, subsurface excavations, or building renovation, obtain Navy approval and coordinate with Federal and state regulatory agencies. This coordination would result in an identification of

precautionary measures to be implemented during construction activities. The precautionary measures would be incorporated into a site-specific Health and Safety Plan (HASP) (see Section 3.7.5) that is consistent with the contaminants present.

- Implement dust suppression measures to limit airborne contaminants in accordance with BAAQMD requirements.
- Handle and dispose of soil in a manner consistent with the contamination present, as required by Federal, state, and local laws and regulations.

These measures, combined with asbestos and LBP measures described later in this section, would reduce this impact to a less than significant level.

Less Than Significant Impacts

Human Exposure to Contamination During Remediation Activities.

Remediation activities could potentially expose workers, tenants, and visitors at HPS associated with reuse activities to hazardous substances during soil disturbance and transport. Specific types of remediation activities, such as moving soil both on and off site and removing underground storage tanks (USTs), could expose workers and the public to contaminated dusts, soil gases, and other contaminated material.

Remediation workers who could directly contact contaminated dust, soil, or groundwater must perform all remediation activities in accordance with a site-specific HASP developed for the specific contaminants (petroleum, volatile organic compounds [VOCs], metals, radium, etc.) found on site, as described in Section 3.7.5. Elements of the HASP would protect those workers and other occupants adjacent to remediation activities by including engineering controls, monitoring, and security measures to prevent unauthorized entry to remediation sites and to reduce hazards outside the investigation/remediation area. The HASP would address the possibility of encountering unknown buried hazards and include procedures to protect workers and the public. If prescribed exposure levels were exceeded, personal protective equipment would be required for workers in accordance with California Occupational Safety and Health Act (CAL OSHA) regulations. While the primary intent of CAL OSHA requirements is to protect workers, compliance with these regulations also reduces potential hazards to other HPS occupants (tenants and visitors), because of required site monitoring, reporting, and other controls. Potential site access controls implemented during remediation include:

- Securing the site with fencing or other barriers of sufficient height and structural integrity to prevent unauthorized pedestrian/vehicular entry based upon the degree of control required.
- Posting "no trespassing" signs.
- Providing on-site meetings with construction workers to inform them about security measures and reporting/contingency procedures.

Dust produced during remediation could contain inorganic chemicals, PAHs, naturally occurring respirable asbestos in soils, and other constituents. Effective dust control prevents nuisance dust and potentially contaminated dust from migrating off site and affecting nearby populations, including off-site residents, on- and off-site workers, and visitors. Dust control measures could include wetting soil materials and placing covers on trucks to reduce the potential for generating airborne dust.

Implementing required safety laws, regulations, and Navy standard operating procedures (SOPs) would be adequate to ensure that potential impacts on workers, visitors, and occupants near remediation activities would be less than significant. No mitigation is required.

Ecological Exposure to Contamination During Remediation Activities. Existing or new ecological receptors (e.g., new wetlands and their inhabitants) introduced under the Proposed Reuse Plan could be exposed to adverse chemical constituents, if not controlled, during remediation activities. The two main areas where sensitive ecological receptors are found at HPS are San Francisco Bay and the proposed wetlands in Parcels B and E, should they be completed prior to complete remediation. As discussed in Section 3.7, potential remedial alternatives that could be implemented at HPS include a variety of measures (see Tables 3.7-2 through 3.7-6). Potential pathways of exposure to contaminants are briefly described below.

- *Surface Water Runoff.* Surface water runoff from remediation sites, if not properly managed, could contain contaminants. As a condition of a Notice of Intent (NOI) to comply with the state storm water permit, the Navy has developed a Storm Water Pollution and Prevention Plan (SWPPP), which provides Best Management Practices (BMPs) to control and prevent surface water runoff from contacting contaminants at HPS.

Prior to remediation, the Navy will be required to submit an NOI to comply with the state construction activity stormwater permit. The state permit, expected to be reissued in late 1998, has

additional requirements to control runoff from small sites (less than 5 acres [2 ha]), including a site-specific SWPPP or a Notice of No Discharge. Implementing the BMPs outlined in the SWPPP, which is a condition of the state permit, would minimize runoff from remediation sites and reduce potential impacts on ecological receptors to a less than significant level. No mitigation is required.

- *Groundwater Discharge.* Contaminated groundwater could impact ecological receptors in the Bay if it were discharged directly into the storm water system. The state's storm water permit effectively prohibits this type of contaminated groundwater discharge to the storm water system. Water could be discharged to the City's sanitary sewer system under permit if the Southeast Water Pollution Control Plant's (SEWPCP) discharge requirements were met. Discharge permit conditions include a sampling and analysis program to ensure that discharge provisions are met. If contaminant concentrations are above discharge levels, then treatment (such as removal of solids in equalization tanks, activated charcoal treatment, or other methods) is required. Permitting requirements would reduce potential impacts on ecological receptors from groundwater discharge to a less than significant level. No mitigation is required.
- *Air Emissions.* Potential impacts of remediation-related emissions on the ecological environment could include potential exposure of terrestrial and avian wildlife, as well as aquatic organisms, through deposition of particulates onto surface water bodies. Air emissions from dust would be minimized by implementing dust suppression methods (e.g., watering) as outlined in the HASP. Potential emissions of asbestos- and lead-contaminated dust during demolition activities would be minimized by following U.S. EPA and BAAQMD abatement and emission reduction requirements. No mitigation is required.
- *Dredging.* Remedial alternatives under consideration for Parcel F include dredging contaminated sediment. Section 3.7.5 contains a discussion of Navy SOPs for the handling of dredged materials. Implementing these SOPs would reduce the potential impacts to a less than significant level. No mitigation is required.
- *Reuse of Contaminated Dredged Material.* Potential impacts on sensitive ecological receptors could result from upland reuse or disposal of contaminated material in an on-site confined disposal facility or constructed wetland in Parcel B or E. Since the primary environmental concern over material Not Suitable for Unconfined Aquatic Disposal (NUAD) is biological effects, reusing material in an environment that isolates the contaminants from sensitive biological receptors would largely eliminate these concerns.

For example, the San Francisco RWQCB has issued guidance that outlines how some NUAD material can be reused in habitat restoration projects, such as wetlands. NUAD material can be used as fill to create wetlands as long as adequate material Suitable for Unconfined Aquatic Disposal (SUAD) is placed on top for chemical and biological isolation.

A further concern regarding the disposal and reuse of NUAD material is the potential for contaminant mobilization and migration into sensitive areas. Soluble constituents could leach from NUAD sediments in an upland disposal site, potentially affecting ecological receptors through contaminating groundwater or surface water resources.

Any reuse of upland dredge materials, including for wetland construction, would require regulatory review and approvals. These reviews would either result in a prohibition against on-site disposal or reuse or the imposition of safeguards to protect human health and the environment. The following represents a range of options available to the Navy to meet regulatory requirements of wetland creation, upland disposal, and dewatering and off-site disposal of dredged materials.

- ◇ Construct the facility with an impermeable liner to prevent the migration of water with potential soluble constituents from the facility to the soil and groundwater below.
- ◇ Implement a water sampling and analysis program as a requirement for discharge into the sanitary sewer system and require pre-treatment if necessary to meet discharge standards.
- ◇ In compliance with the state storm water permit, construct the facility to prevent storm water runoff from the site to the storm water system or Bay.
- ◇ Cap the NUAD material contained in the confined dewatering facility with an appropriate thickness of SUAD material to prevent exposure to biological receptors.

If dredged material is used to construct wetlands, the following additional measures would apply:

- ◇ Precede the design with a testing program to fully characterize the chemical and engineering properties of the sediments and identify appropriate construction methods and biotic materials to be used.

- ◇ Cap the wetland material with SUAD material to prevent the migration of contaminants by leaching or bioturbation.

Implementing these types of measures would ensure that potential impacts on ecological receptors from the disposal or reuse of dredged material would be less than significant. No mitigation is required.

Reuse After Complete Remediation: Proposed Reuse Plan
Significant and Mitigable Impacts

Note: Impacts 3 and 5 are significant and mitigable under CEQA, but are less than significant under NEPA. The City and the Agency view the proposed mitigation measures for these impacts as a mitigation program that would require adoption by decision-makers and long-term monitoring. These general controls and requirements would prevent unacceptable human health risks associated with routine reuse activities after complete remediation. The Navy considers these controls to be a regulatory requirement and therefore not mitigation. Therefore, under NEPA, this potential impact is considered less than significant, and no mitigation is required.

Impact 3: Human Exposure to Residual Chemical Constituents During Routine Use. Based on the Proposed Reuse Plan, the human populations that could be present once HPS development has occurred include workers, visitors, and residents. Potential human health impacts could occur if these populations were exposed to elevated levels of residual chemical constituents in the soil below the remediated zone and in groundwater. Potential exposure pathways include inhalation of contaminated soil particles, inhalation of vapors from groundwater that have migrated into an indoor environment, and direct contact with soils or groundwater with residual chemical constituents.

Mitigation 3. Implement and monitor compliance with institutional controls designed to be protective of public health, as determined in consultation with the regulatory agencies. These institutional controls would likely include a prohibition on the use of groundwater and on residential uses in non-residential areas, notification regarding residual contamination, and encapsulation methods. Implementing these measures would reduce this impact to a less than significant level.

Impact 4: Human Exposure to Residual Chemical Constituents During Construction Activities. Implementing the Proposed Reuse Plan would require construction activities, such as utility trench excavation, foundation excavation, pile installation, and construction dewatering. Potential impacts associated with each of these types of construction activities are briefly addressed below.

During excavation, workers could encounter soils and groundwater with residual chemical constituents if construction occurs below remediated zones. Construction workers could be exposed to residual contamination through inhaling airborne contaminated dust or direct contact with contaminated soil or groundwater. If drilling is required, for example, to place foundation support piles, residual chemical constituents could be encountered as soil and groundwater are removed to the surface.

Extensive subsurface excavation could require dewatering to maintain adequate construction conditions. Below-grade soil excavation or trenching activities that require dewatering could potentially encounter contaminated groundwater in Parcels B, C, D, and E. Pumping water from excavation pits or dewatering wells at construction sites could release contaminated groundwater, exposing construction workers or the public.

Mitigation 4. Perform construction activities in a manner consistent with institutional controls designed to be protective of public health, as determined in consultation with the regulatory agencies, and take the following additional steps, where warranted by site-specific information:

- Obtain information on soil and groundwater contamination by sampling, reviewing existing Navy data, and/or consulting with regulatory agencies. When no sampling results are available, develop and implement a sampling program similar to that required under Article 20 of the San Francisco Public Works Code.
- If contamination is identified in the areas proposed for disturbance, prepare a site mitigation plan, similar to that required under Article 20 of the Public Works Code, and develop a HASP, as required by CAL OSHA. The site remediation plan would require appropriate handling and disposal of contaminated materials. The HASP would include site-specific controls, such as worker training and personal protective equipment (PPE), dust suppression, air monitoring, and site security.
- Dispose of groundwater in accordance with applicable permits. It is anticipated that most groundwater removed during dewatering activities would be discharged to the City's sanitary sewer system and would therefore require a discharge permit from the City. Permit conditions would ensure that contaminant levels would be reduced to the extent required. If discharge to surface water is selected as the most appropriate method for disposal of groundwater removed during dewatering, a National Pollution Discharge Elimination System (NPDES) permit issued by the RWQCB would be required. The types of amounts of

contaminants released would be minimized to the extent required by law.

Implementing these measures would reduce this impact to a less than significant level.

Impact 5: Human Exposure to Previously Unidentified Subsurface Hazards. As described previously, by the time the Proposed Reuse Plan is fully implemented, the Navy will have completed extensive investigations and actions to identify and remove abandoned USTs and to manage identified contamination from UST leaks. There would continue to be a potential risk associated with unidentified abandoned USTs or buried hazardous debris. If an unidentified UST (which could contain hazardous materials or vapors) or buried hazardous debris were uncovered or disturbed during or after build-out of the Proposed Reuse Plan, workers, visitors, or occupants of nearby buildings could experience adverse health effects.

Mitigation 5. Inform contractors that unknown hazardous materials could be encountered during demolition or excavation, and instruct them regarding steps to be taken if this occurs. These steps include the following:

- The contractor shall immediately stop work in the area and notify the San Francisco Department of Public Health (DPH) verbally and in writing.
- The contractor shall immediately secure the area to prevent accidental access by construction workers or the public.
- The identified material shall be sampled as directed by DPH.
- Handling and disposal of identified materials shall be in accordance with DPH direction and in compliance with applicable laws and regulations.
- Work on site may resume only where and when permitted by DPH.

Implementing these measures would be adequate to ensure that potential adverse effects on human health and the ecological environment from unidentified subsurface hazards would be less than significant.

Impact 6: Ecological Exposure to Residual Chemical Constituents During Construction Activities. Disrupting soil containing residual contaminants during construction activities could expose receptors to chemical constituents. One pathway for the transport of chemicals to

the Bay or proposed wetlands is surface water runoff from construction sites. Runoff that travels over potentially contaminated soil could transport dissolved organic chemicals, inorganic chemicals, and sediment to sensitive receptors.

Another potential exposure pathway is via discharge of potentially contaminated groundwater to the storm water system and then to the Bay. In addition, subsurface utility lines could act as conduits for groundwater to migrate to the Bay. Untreated water carrying dissolved chemicals could exceed water quality objectives for the Bay and impact sensitive receptors. Finally, dockside repairs along the HPS shoreline (in particular, boring and driving piles along the Bay) could disturb sediments in Bay waters, increasing suspended sediment and reducing dissolved oxygen. This is considered a significant and mitigable impact.

Mitigation 6.

- For surface water impacts during construction activities, follow all required conditions of the State of California storm water construction permit, including implementing BMPs to reduce storm water runoff from the site. BMPs could include covering spoils piles with impermeable coverings, constructing accumulation ponds, and installing silt fences.
- For groundwater discharge impacts, follow all permit requirements for discharge into the sanitary sewer system. Water would be treated as appropriate to comply with discharge levels required by the permit. As described in Section 3.7.3, storm drains located in or above contaminated groundwater would be lined and/or pressure grouted where necessary to prevent infiltration.
- Assess potential effects on groundwater gradients within construction areas if dewatering is proposed or if new utility lines are proposed that could act as conduits for contaminants in groundwater. Conduct dewatering activities and design utility installations such that contamination does not spread to the Bay or other ecologically sensitive areas. Methods to be considered could include installing sheet piling, groundwater pumping/recharge, and installing utility lines in impermeable bedding material.
- For boring and pile driving activities along the Bay, drive the piles directly into the sediments without boring where possible. This would minimize and localize sediment disruption. Where pile driving without drilling is not possible due to shallow bedrock, a casing would be driven into the solid material, preventing collapse of the material and allowing drilling to occur within the casing

without excessive sediment disruption. A pile would then be placed in the casing and backfilled with concrete.

Implementing these measures would reduce this impact to a less than significant level.

Impact 7: Cross-Contamination Among Water-Bearing Zones. If drilling is required to install piles where groundwater contaminants have been identified (i.e., in Parcels B, C, D, and E), the open boring could create a conduit for chemicals to move to deeper groundwater zones, resulting in degradation of deeper groundwater.

Mitigation 7. The mitigation for potential cross-contamination of water-bearing zones is similar to the mitigation for Impact 6 above. Implementing the mitigation addressing pile installation into Bay sediments would reduce the impact to a less than significant level.

Less Than Significant Impacts

Hazardous Materials Use and Generation. The Proposed Reuse Plan forecasts an additional 560,000 square feet (52,025 square m) of building space to be used for industrial activities (including maritime industrial use) by the year 2010. By the year 2025, projected industrial occupancy could reach 1,135,000 square feet (105,445 square m).

Industries generating hazardous waste under the Proposed Reuse Plan would be primarily small quantity generators, but exact quantities of materials to be used or wastes generated are not known and cannot be quantified at this time. Some businesses (e.g., ship repair facilities or large manufacturing firms) could require large-quantity generator status. Hazardous wastes generated by maritime uses, such as waste oil and oily wastes, would increase with an increase in maritime activity.

No significant impacts related to hazardous materials use or hazardous waste generation are anticipated after HPS property conveyance, because Federal, state, and local laws require planning to ensure that hazardous materials are properly used, stored, and disposed of to prevent or minimize injury to human health and the environment. For example, if businesses use acutely hazardous materials over the threshold planning quantities listed in the City's hazardous materials registration application, they would be required to apply for an Acutely Hazardous Materials Permit from the City. The City would review such permit applications, taking into account the proximity of local residents. Users of certain materials could be required to prepare Risk Management Prevention Plans. If quantities stored on site are less than threshold planning levels, the materials must still be listed on a disclosure form, along with the other hazardous materials in use, as part of compliance with the City's

Hazardous Materials Ordinance. Impacts are considered to be less than significant. No mitigation is required.

Hazardous Materials Management. The quantity of hazardous materials used, stored, and disposed of under the Proposed Reuse Plan likely would increase compared to existing conditions. Such uses are tightly regulated. With implementation of the Proposed Reuse Plan, separate organizations would be responsible for managing hazardous materials according to applicable regulations. Depending on types and quantities of hazardous materials used, each organization would be subject to the Federal Superfund Amendments and Reauthorization Act (SARA) Title III, 42 U.S.C. § 9601 note (West, 1995) and state hazardous materials business plans and risk management prevention programs for emergency planning review and community right-to-know inventory reporting. These impacts would be less than significant. No mitigation is required.

Building Renovation and Demolition: Asbestos-Containing Materials in Buildings. U.S. EPA's National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations, enforced by the BAAQMD, set forth requirements on how to handle ACM in buildings under repair, remodeling, or demolition. Under the demolition case, for example, the building must be surveyed for ACM by a CAL OSHA-certified asbestos consultant or a U.S. EPA-certified building inspector. The survey report is required in order to obtain a demolition permit through the BAAQMD. Work practices are governed by the Federal Occupational Safety and Health Administration (OSHA) and CAL OSHA regulations. CAL OSHA regulations set forth sampling, testing, notification, management, and work practices for undamaged ACM that remains in place.

Prior to issuing a building permit for partial or full demolition of existing buildings, the San Francisco Department of Building Inspection requires evidence that all ACM has been removed in accordance with Federal and state regulations. The contractor and hauler of asbestos materials from the site would be required to manage such materials in accordance with CAL OSHA, U.S. EPA, Department of Toxic Substances Control (DTSC), and BAAQMD regulations, as well as Federal, state, and local laws, including Titles 22 and 23 of the California Code of Regulations (C.C.R.) and the City's Hazardous Materials Ordinance. Pursuant to Section 19827.5 of the California Health and Safety Code, the San Francisco Department of Building Inspection cannot issue a demolition permit until the applicant has demonstrated compliance with notification requirements under applicable Federal regulations regarding asbestos. These regulations and procedures, established as part of the City's permit review process, would ensure that potential impacts during building

demolition due to exposure to asbestos would be less than significant. No mitigation is required.

Building Renovation and Demolition: Polychlorinated Biphenyls. As stated in Section 3.7.4, the Navy is removing all out-of-service or abandoned electrical equipment that contains PCBs at concentrations greater than 5 ppm. Therefore, a less than significant impact is anticipated for PCB-containing fluids in electrical equipment remaining at HPS. No mitigation is required.

Building Renovation and Demolition: Lead-Based Paint. A less than significant impact is anticipated for potential exposure to LBP. The San Francisco Building Code, Chapter 36 requires that all pre-1974 buildings be sampled for LBP prior to conducting activities that would disturb LBP, which would include renovation and demolition. In buildings proposed for demolition, an abatement plan must be prepared by a qualified environmental specialist, and project activities expected to disturb LBP must be performed by licensed and certified contractors. Contractors are required to manage LBP on building materials in accordance with Federal OSHA, CAL OSHA, DTSC, and BAAQMD regulations and applicable Federal, state, and local laws, including 22 and 23 C.C.R. Future owners and users at HPS would also be responsible for complying with applicable state and local regulations concerning LBP. No mitigation is required.

Reduced Development Alternative

The Reduced Development Alternative includes mixed land uses similar to those in the Proposed Reuse Plan, but with development reduced in scale. There would be fewer and less frequent demolitions and redevelopment, reduced construction activity, and fewer persons on the site. Although the potential for exposure to hazardous substances by human and ecological receptors would be reduced, the reduction would not be sufficient to reduce the level of impact for any of the issues discussed under the Proposed Reuse Plan. Therefore, the impacts for the Reduced Development Alternative would be the same as under the Proposed Reuse Plan.

4.7.3 No Action Alternative

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. Investigation and remediation of potential and identified contaminated sites would continue in accordance with the remedies contained in the CERCLA ROD for each parcel. The Navy would continue its compliance program for hazardous materials and waste.

Under the No Action Alternative, the Navy could continue to lease properties to various tenants that use hazardous materials and generate hazardous waste. Management of these materials and waste

would continue according to current regulations and would be the responsibility of the tenants. No impacts associated with hazardous materials management or hazardous waste management practices are anticipated. No mitigation is required.

4.8 GEOLOGY AND SOILS

The ROI for geology and soils is the South Bayshore planning area. Impacts are considered to be significant if an action substantially increases the public or environmental risks associated with geologic hazards. Geologic hazards of concern include naturally occurring asbestos, seismic hazards, erosion, and landsliding. Table 4.8-1 summarizes geology and soils impacts and their significance.

**TABLE 4.8-1:
SUMMARY OF GEOLOGY AND SOILS IMPACTS**

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Naturally occurring asbestos	○	○	◐	◐
Seismic hazards associated with older buildings	○	○	◐	◐
Seismic hazards associated with newer buildings	○	○	◑	◑
Erosion	○	○	◑	◑
Landsliding	○	○	◑	◑

Legend:

Significant Impact, Unmitigable

Significant Impact, Mitigable

Less Than Significant Impact

No Impact



- 4.8.1 Navy Disposal** The disposal of Federal property at HPS out of Federal ownership would not result in changes to geologic conditions. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

- 4.8.2 City of San Francisco Reuse Alternatives**
- Proposed Reuse Plan***
- Significant and Mitigable Impacts**
- Impact 1: Naturally Occurring Asbestos.* Because asbestos-containing serpentinite rock occurs at HPS, construction-related excavation activities under the Proposed Reuse Plan could cause chrysotile asbestos associated with serpentinite to become airborne, creating a potentially significant impact to public health and safety.

Mitigation 1: Follow BAAQMD, U.S. EPA, and Federal and CAL OSHA regulations for construction and demolition activities. Continuously wet serpentinite involved in excavation or drilling operations. Wet and cover (with a 10-millimeter thick polyethylene

sheet, either weighted or tied down) stockpiled serpentinite. Do not use serpentinite as road, surfacing, or paving material. Cap serpentinite used as fill material with at least 1 foot (0.3 m) of clean non-serpentinite fill material, and implement institutional controls to prevent future exposure from excavation activities. Treat excavated waste materials containing greater than one percent asbestos by weight as hazardous waste, and transport and dispose of this material in accordance with applicable Federal and state regulations. Implementing these measures would reduce this impact to a less than significant level.

Impact 2: Seismic Hazards Associated with Older Buildings. Potential impacts from seismic activity could occur in older buildings at HPS. Unconsolidated sediments and fill materials underlying the site would be subject to liquefaction, densification, and differential settlement in the event of a sustained earthquake. Strong ground shaking and acceleration is possible from seismic events on the nearby San Andreas, Hayward, and other faults. Seismic activity could increase risks to the public if the occupancy of older buildings is increased during reuse.

Mitigation 2. Before increasing the occupancy of existing buildings, survey buildings that may be unsafe in the event of an earthquake, and take appropriate steps to prevent injury. These steps could include interior modifications, bracing, retrofits, and/or access restrictions. Implementing these measures would reduce this impact to a less than significant level.

Less Than Significant Impacts

Seismic Hazards Associated with Newer Buildings. The San Francisco Department of Building Inspection and compliance with the San Francisco Building Code ensure that structures are built to withstand the effects of ground shaking and to protect the safety of persons in and around buildings. Newer buildings that meet current seismic and building codes, and new construction built after property transfer, would be relatively safe in the event of an earthquake. Seismic impacts to young and newly constructed buildings are considered to be less than significant. No mitigation is required.

Erosion. Under the Proposed Reuse Plan, increased erosion could occur in areas where development plans indicate cut and fill grading. Potential impacts include increased sediment discharge to the Bay, development of drainage gullies, and deposition of sediment in the existing drainage network (storm sewers and culverts). The impacts of increased erosion are considered less than significant.

Permitting requirements of the Department of Building Inspection follow the San Francisco Building Code, which restricts cut and fill slopes to no greater than 2:1 (26.5 degrees), unless shown not to create a hazard to public or private property. Terracing is required by the Code to prevent runoff down graded slopes. The cut and fill slopes must be prepared and maintained to control erosion. Storm drains and gutters must be constructed to direct runoff from proposed or existing surfaces away from areas of potential erosion (Chew, 1996; Young, 1996). Landscaping is to be used, where feasible, along potential erosion areas to reduce the scouring effect of high water velocity and to encourage rain water infiltration into the soil. All construction-related discharges require a permit from the San Francisco Department of Public Works pursuant to the City's Industrial Waste Ordinance (Public Works Code Article 4.1, Ordinance 19-92, Section 123), which controls sediment transport during and after construction activities. Implementing these standard operating procedures would ensure that potential impacts would remain at a less than significant level. No mitigation is required.

Landsliding. Impacts due to landslides are most likely in areas where grading could destabilize an existing slope or hillsides that are underlain by serpentinite bedrock. The destabilization of hill slopes would probably not threaten safety but could damage structures. Existing structures in areas of landslide vulnerability, such as Hunters Point Hill, are not occupied, and, if not demolished, would be renovated and/or reconstructed up to current code, therefore minimizing potential risks. Furthermore, the Department of Building Inspection requires conformance with the San Francisco Building Code and provides procedures specifically to identify and mitigate impacts before new buildings are constructed. Therefore, less than significant impacts related to landslides are anticipated. No mitigation is required.

Reduced Development Alternative

The impacts and mitigations for the Reduced Development Alternative would be similar to those under the Proposed Reuse Alternative, except fewer persons would be exposed to airborne asbestos, seismic hazards, erosion, and landsliding.

4.8.3 No Action Alternative

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could possibly continue the existing leases (see Appendix C). Currently occupied buildings are considered safe for occupancy but may not meet current building codes. As no additional leasing is anticipated under this alternative, no impacts would occur. No mitigation is required.

4.9 WATER RESOURCES

The ROI for water resources is HPS and San Francisco Bay receiving waters. Project construction and operational activities could affect San Francisco Bay water quality, including near-shore waters, because of changes in surface water runoff or other discharges. This analysis evaluates the potential for reuse alternatives to substantially degrade water quality. Compliance with NPDES permits is assumed necessary to protect water quality. This analysis examines potential effects as they relate to three types of discharges: treated combined sewer overflows (CSOs), storm water, and municipal wastewater effluent.

Water quality impacts would be considered significant if an alternative would result in any of the following:

- Violation of Federal, state, or local water quality standards.
- A substantial degradation in the quality of receiving waters due to the volume or character of discharges.
- Introduction of pollutants into groundwater.

Criteria for evaluating surface and groundwater quality in the San Francisco Bay Area are based on beneficial uses and water quality objectives established by the San Francisco RWQCB, as authorized under the Porter-Cologne Water Quality Control Act, California Water Code §§ 13000-13999.10. Both beneficial uses and water quality objectives for the HPS project area are described in Section 3.9.

A summary of water resources impacts is presented in Table 4.9-1.

TABLE 4.9-1: SUMMARY OF WATER RESOURCES IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Discharges of treated combined sewer overflows	○	○	◐	◐
Discharges of storm water	○	○	◐	◐
Discharges of municipal wastewater effluent (dry-weather flows)	○	○	◑	◑
Introduction of pollutants to groundwater	○	○	◑	◑

Legend:

Significant Impact, Unmitigable
 Significant Impact, Mitigable
 Less Than Significant Impact
 No Impact



4.9.1 Navy Disposal The disposal of Federal property at HPS out of Federal ownership would not result in any direct water resources impacts. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.9.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Three types of discharges to the Bay—treated effluent, treated CSOs, and storm water runoff—could be affected by implementing the Proposed Reuse Plan. Introducing new residents and businesses would result in increased (dry-weather) flows to the City's SEWPCP. These flows would receive treatment and be discharged to the Bay in the form of treated effluent. In addition, proposed improvements to the HPS storm water collection system could affect the volume and quality of direct storm water discharges to the Bay and could increase treated effluent and CSO volumes.

There are three general options for treatment of storm water at HPS:

- Option 1: Upgrade and maintain the Navy's separated storm water conveyance system, with capacity for a two-year storm event.
- Option 2: Replace the Navy's system with a new separated system, with capacity for a five-year storm event.
- Option 3: Replace the Navy's system with a combined system, in which storm water and sewage would be transported to the SEWPCP for treatment in the same pipes.

These options could be developed under either the Proposed Reuse Plan or the Reduced Development Alternative.

Because specific upgrades to the sanitary sewer and storm drainage systems have not been designed, these three options are necessarily general in nature and would require further analysis when more specifics are known. Refinements could include additional storage, treatment, or alternative approaches to the handling of storm water (e.g., retention, reclamation). The analysis of the three options presented here is programmatic in nature. Options 1 and 2 are considered the same, because the quantity of storm water that would ultimately reach the Bay (through pipes or overland flow) would be about the same. In each case, when the capacity of the system is exceeded, localized ponding of storm water would occur, along with increased overland flows to the Bay.

As described in Section 3.9, a City-wide effort is underway to address the cumulative effects of increased development on the City's

combined sanitary sewer and storm water system. The San Francisco Public Utilities Commission (PUC) has analyzed potential revisions to drainage patterns for the City's Bayside (City and County of San Francisco, Public Utilities Commission, 1998b). The analysis includes drainage patterns for HPS reuse under two scenarios: an upgraded separate sewer and storm water system (Option 2) and a combined storm water/sewer system where there would be no direct storm water discharge (Option 3).

The purpose of the PUC Bayside study is to evaluate the effects of several reasonably foreseeable development projects on the City's Bayside wastewater control facilities. Besides HPS reuse, other specific cumulative development projects analyzed in the Bayside study include the Mission Bay project, Candlestick Point Stadium and Retail/Entertainment Center project, and other waterfront/Port property development, as well as general cumulative development in the City as projected by ABAG.

Flows are estimated for discharges to the Bay for the City's entire Bay shoreline (hereafter identified as "total Bayside"). These flows include treated wastewater and combined sewer overflows only and do not include direct storm water discharges to the Bay. The PUC Bayside study also analyzed cumulative impacts to the 1,469-acre (595-ha) Yosemite drainage basin, of which HPS comprises 493 acres (200 ha), or about 34 percent.

Options 1 and 2 would have a negligible effect on CSO volumes and would perpetuate existing storm water discharges to the Bay. The PUC Bayside study indicates that, compared with existing conditions, storm water discharged directly to the Bay would be reduced under Option 3. However, this option would increase the total volume of wastewater plus storm water discharged to the City's combined sewer system and would change the volume of CSOs. These effects are described below and are summarized in Table 4.9-2.

Bayside Base Case

In the PUC's Bayside study, the "base case" provides a baseline for comparison that resembles existing conditions but also includes projects such as the Giants ballpark and the Sunnydale flood control project. Under the base case, the total Bayside wastewater/combined sewer flow is estimated at an annual average of 31,113 mgd (117,800 million liters a year). Total annual average Bayside CSOs are estimated at 910 mgd (3,444 million liters a year), or about 2.9 percent of overall flows. About 5.3 million gallons (20 million liters) of these CSOs are from the Yosemite basin, including HPS. The long-term average number of CSOs in the Yosemite basin is one a year.

TABLE 4.9-2:
CHANGES IN EFFLUENT, CSO, AND STORM WATER VOLUMES

	Bayside Base Case + Proposed Reuse Plan with Separate System (Option 1 or 2)		Bayside Base Case + Proposed Reuse Plan with Combined System (Option 3)		Cumulative Bayside + Proposed Reuse Plan with Separate System (Option 1 or 2)		Cumulative Bayside + Proposed Reuse Plan with Combined System (Option 3)	
	Flow Volume	Change from Existing (%)	Flow Volume	Change from Existing (%)	Flow Volume	Change from Existing (%)	Flow Volume	Change from Existing (%)
Total Treated Effluent (mgd)	30,203	0.49%	30,350	0.49%	30,537	1.1%	31,496	4.3%
Total Bayside CSOs (mgd)	910	0.07%	910.6	0.07%	951	4.5%	1,008	11%
Yosemite Basin CSOs (mgd)	5.3	0%	5.3	0%	7.1	34%	7.3	38%
Total Bayside Flow ¹ (mgd)	31,113	0.5%	31,261	0.5%	31,488	1.2%	32,504	4.5%
% of Flow Treated								
Secondary	87.3%	—	87.4%	—	87.0%	—	86.9%	—
Primary	9.7%	—	9.7%	—	10.0%	—	10.0%	—
Storm Water Flow (mgd)	240	(5.4%)	227	(5.4%)	0	NA	0	NA

Source: City and County of San Francisco, Public Utilities Commission, 1998b.

Notes:

mgd = millions gallons per year

NA = Not Applicable

¹ Total Bayside Flow is the sum of Total Effluent and Total Bayside CSOs.

() indicates a negative number.

Bayside Base Case Plus Proposed Reuse Plan with Separate System (Option 1 or 2)

Implementing the Proposed Reuse Plan under a separate system would increase total annual average wastewater (i.e., treated effluent) discharges to the Bay along the Bayside by less than 1 percent (0.49 percent, or 147 mgd [556 million liters a year]) as compared to the base case (Table 4.9-2). The frequency and duration of CSO events would not change or would be less than can be predicted by the Bayside model. Bayside CSO volumes would increase by 0.07 percent (0.6 mgd [2.3 million liters a year]) compared to the base case. Storm water discharge to the Bay would remain the same or would decrease by about 5.4 percent if the overall amount of paved surfaces is reduced, as anticipated with reuse.

Bayside Base Case Plus Proposed Reuse Plan with Combined System (Option 3)

Implementing the Proposed Reuse Plan using a combined system would increase by 1.1 percent the total average wastewater (i.e., treated effluent) discharged as compared to the base case. The annual CSO discharges in the Yosemite basin would increase by 34 percent over the base case, and overall Bayside CSO volumes would increase by 4.5 percent. However, storm water would not be discharged directly to the Bay under this scenario.

Cumulative Bayside Plus Proposed Reuse Plan

Implementing the Proposed Reuse Plan using a separate system, when combined with other cumulative projects, would result in a 3.7 percent increase in cumulative discharges of treated effluent to the Bay. Of the projected 3.7 percent (1,109 mgd [4,198 million liters a year]) increase, about 147 mgd (556 million liters a year), or 13 percent, would be attributable to increases in dry-weather flow at HPS. Overall Bayside CSO volumes would increase by 6.0 percent over the base case, of which 0.6 mgd (2.3 million liters a year), or 1 percent of the cumulative increase of 55 mgd (208 million liters a year), would be attributable to dry-weather flows at HPS. Cumulative CSOs to the Yosemite basin would increase by 26 percent compared to the base case, although none of this increase would be attributable to HPS.

Implementing the Proposed Reuse Plan using a combined system under the cumulative development scenario would increase total annual flows of treated effluent to the Bay from the entire Bayside by 4.3 percent (1,293 mgd [4,894 million liters a year]) over the base case. Bayside CSO volumes would increase by 11 percent over the base case, and CSOs to the Yosemite basin would increase by 38 percent over the base case. Overall, in this scenario, HPS would contribute about 26 percent of the projected cumulative increase in treated effluent and 42

percent (98 mgd [371 million liters a year]) of the projected cumulative increase in Bayside CSO volumes.

Significant and Mitigable Impacts

Impact 1: Discharges of Treated Combined Sewer Overflows. As described in Section 3.9, CSOs are an accepted and permitted feature of the City's combined sewer system and occur, on average, about once per year in the HPS area, when the treatment and storage capacity of the City's combined sewer system is exceeded in rainy weather. CSOs receive primary treatment and consist of about 94 percent storm water and 6 percent sanitary sewage.

Within regulatory constraints related to quantity and quality, CSOs have not been shown to adversely affect water quality or aquatic biota, but they can affect beneficial uses when they raise concentrations of bacteria in water and result in the posting of beaches to prohibit water-contact recreation. While no fishing or water-contact recreation is permitted at HPS, and none is proposed in the future under the Proposed Reuse Plan, these activities do occur nearby at the Candlestick Point State Recreation Area. CSOs also generate a high degree of public concern, and recent wastewater planning efforts at Mission Bay have focused on measures to eliminate that project's potential contribution to cumulative increases in CSOs.

Redeveloping HPS with a combined sewer system (Option 3) would increase Bayside CSO volumes by 41 mgd (155 million liters a year), an increase of 4.5 percent over the base case, primarily due to the introduction of HPS storm water flows to the City's combined sewer system. This projected increase in CSO volumes would represent a substantial percentage (about 42 percent) of the overall cumulative increases in CSO volumes (about 11 percent) projected as a result of Bayside development. The cumulative increase in CSO volumes at outfalls in the Yosemite basin (about 38 percent) would have the potential to negatively affect beneficial uses at Candlestick Point State Recreation Area if it would increase the number of days that water-contact recreation and other activities are prohibited. The potential duration of beach closings and pollutant loading increases (due to increases in CSOs and treated effluent) and decreases (due to the elimination of direct storm water discharges) have not been calculated.

The act of improving or replacing the existing separated storm water system at HPS (Option 1 or 2) would have no effect on the volume and frequency of CSOs. Even with these options, however, the Proposed Reuse Plan would result in increased activity at HPS, which would result in increased sewage (dry-weather flow) that would be conveyed to the SEWPCP for treatment and discharge. These dry-weather flows would result in a 0.5 percent (147 mgd [556 million liters a year])

increase in discharges of treated effluent, which would in turn result in a 0.07 percent (0.6 mgd [2.3 million liters a year]) increase in CSO volumes during wet weather. This increase in CSO volumes would be negligible, both in the context of existing discharge volumes and in terms of their contribution to the projected cumulative increases in CSO volumes.

Because conservative presumptions of significance are warranted when a setting is impaired, the Reuse Plan's contribution to cumulative CSO volumes projected under Option 3 would be considered a cumulatively significant impact. This impact could be mitigated by implementation of measure one, below, which would also provide the opportunity to consider alternatives to the increased flows projected under Options 1 and 2, although these flows are not considered significant within a regulatory or NEPA/CEQA context.

Mitigation 1. Eliminate projected increases in CSO volumes caused by storm water discharges to the City's combined system by upgrading or replacing the separated sewer system at HPS (Option 1 or 2) or by adding substantial storage to the combined sewer system (Option 3). Also consider ways to offset nonsignificant increases in CSO volumes attributable to sanitary flows. Implementing these measures would reduce this impact to a less than significant level.

Impact 2: Discharges of Storm Water. An estimated 240 mgd (908 million liters a year) of storm water are currently discharged via the separated storm water system at HPS. In addition, storm water flows overland to the Bay and causes localized flooding when the system's capacity is exceeded. These conditions would be perpetuated by Option 1. Under Option 2, the new separated system would have a greater capacity than the existing system (or Option 1) and would be designed to minimize overland flow and resolve flooding problems. Volumes of storm water discharges would remain roughly the same, however, or decrease slightly if the removal of paved surfaces increases rainwater infiltration, as expected. Under Option 3, storm water discharges at HPS would be eliminated or substantially reduced.

As explained in Section 3.9, existing storm water discharges from HPS do not receive treatment and have been reported to contain industrial pollution, including hydrocarbons, total suspended solids (TSS), zinc, copper, lead, and nickel. Remediation activities described in Section 3.7 are expected to decrease the concentrations of pollutants in storm water discharges, improve the quality of storm water discharges, and improve sediment quality adjacent to HPS.

The quality of future storm water discharges will depend on the nature of future land uses and on the effectiveness of water quality control measures. Specific future uses are largely unknown at this time.

Storm water discharges from HPS are currently permitted under an NPDES General Industrial Permit issued by the RWQCB. Under the Proposed Reuse Plan, the City would be required to adhere to the transfer provisions in the General Industrial Permit, which regulate current and future uses and require preparation and adherence to a SWPPP. It is unknown to what extent storm water quality would improve in the future as a result of remediation activities, new land uses, permit conditions, and control measures. Therefore, the water quality effects of storm water discharges would be considered significant and mitigable.

Mitigation 2. To ensure that the quality of storm water discharges improves as anticipated, implement the following measures:

- Develop and implement a SWPPP that includes provisions for controlling soil migration off site (e.g., silt fences, settling units) during periods of runoff and for monitoring possible sources of industrial contaminants.
- Implement BMPs such as public education and outreach, pollution prevention, and good housekeeping.

Implementing these measures would reduce this impact to a less than significant level.

Less Than Significant Impacts

Discharges of Municipal Wastewater Effluent (Dry-Weather Flows). Dry-weather flows (sanitary sewage only) of 0.67 mgd (2.5 million liters a day) would approximately double existing sewage flows from HPS. When added to average dry-weather flows of 65 to 70 mgd (246 to 265 million liters a day) at the treatment plant, total flows would be well within the plant's peak dry-weather capacity (150 mgd [568 million liters a day]). The project's contribution to wet-weather flows is addressed under Significant Impacts, above.

Under Option 3, the increased volume of wastewater effluent would not only be attributable to dry-weather flows but also to the project's increase in storm water flows to the City's combined sewer system. Annual increases in wastewater effluent would be about 334 million gallons (1,264 million liters), or about 1.1 percent more than base case conditions.

The increase in treated wastewater flows from the SEWPCP resulting from effluent generated by the Proposed Reuse Plan (under all three options) would be about 1 percent or less.

Existing tenant operations at HPS include a variety of uses, such as storage space, art studios, machine workshops, and automobile restoration garages. Based on a comparison of land uses, the projected HPS waste stream is not expected to substantially worsen in terms of pollutant concentrations, compared to the site's current waste stream flowing to the plant. A water quality analysis conducted for the Mission Bay project indicated that effluent flow increases of two to three percent would not conflict with allowable pollutant loadings from the plant, RWQCB Bay water quality objectives, or U.S. EPA National Ambient Water Quality Criteria (NAWQC). Therefore, under the Proposed Reuse Plan, the one percent or less increase in effluent discharge from the SEWPCP would not be likely to adversely affect compliance with these objectives. As explained in Section 3.9, the City's discharge of treated effluent to the Bay has not been shown to have significant adverse impacts to deep-water quality in the Bay. No mitigation is required.

Introduction of Pollutants to Groundwater. No impacts on groundwater would be anticipated as a result of reuse, because of mitigation measures described in Section 4.7. These measures would ensure that construction activities associated with reuse do not provide a conduit for contamination and degrade groundwater quality. The Federal, state, and City government regulatory framework and infrastructure to protect groundwater resources remain applicable and would ensure that no pollutants are introduced to groundwater. See Section 4.7 for a discussion of groundwater remediation activities. No further mitigation is required.

Reduced Development Alternative

Significant and Mitigable Impacts

Impact 1: Discharges of Treated Combined Sewer Overflows. Under Options 1 and 2, cumulative CSOs generated by the Reduced Development Alternative would be similar to the base case. Under Option 3, CSO volumes would increase, as under the Proposed Reuse Plan. This is considered a significant and mitigable impact.

Mitigation 1. Implement Mitigation 1 identified for the Proposed Reuse Plan.

Impact 2: Discharges of Storm Water Pollutants. The changes in storm water runoff generated by the Reduced Development Alternative would be similar to those under the Proposed Reuse Plan. This

increase would result in a significant and mitigable water quality impact.

Mitigation 2. Implement Mitigation 2 identified for the Proposed Reuse Plan.

Less than Significant Impacts

Discharges of Municipal Wastewater Effluent (Dry-Weather Flows).

Development under this alternative would be less intense than under the Proposed Reuse Plan, resulting in substantially less dry-weather sewage generation (0.23 mgd [0.87 million liters a year] compared with 0.67 mgd [2.5 million liters a year]). This level of sewage generation is very similar to existing sewage generated at HPS (0.25 to 0.30 mgd [0.9 to 1.1 million liters a day]). Therefore, discharges of municipal wastewater effluent under the Reduced Development Alternative would have a less than significant water quality impact. No mitigation is required.

Introduction of Pollutants to Groundwater. As described for the Proposed Reuse Plan, no impacts on groundwater would be anticipated under the Reduced Development Alternative, because of mitigation measures described in Section 4.7. No further mitigation is required.

4.9.3 No Action Alternative

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, the Navy could continue existing leases (see Appendix C). The Navy's SWPPP would continue to be implemented, and no construction-generated storm water impacts would occur. Activities would comply with NPDES permit requirements. No significant water resources impacts are anticipated, and no mitigation is required.

4.10 UTILITIES

The ROI for utilities is the South Bayshore planning area. Impacts on utilities would be considered significant if an alternative would result in any of the following:

- Potable water deficiencies due to the need for a substantial upgrade or expansion of the potable water supply or distribution system.
- A violation of Federal, state, or local storm water discharge standards or wastewater standards.
- Increased fire hazards due to necessary expansion of fire protection systems.
- Service deficiencies due to the need for substantial upgrades to electrical, gas, or telephone utilities.
- Breach of published Federal, state, or local standards relating to solid waste or litter control.

Table 4.10-1 presents a summary of impacts to HPS utilities.

TABLE 4.10-1: SUMMARY OF UTILITIES IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Potable water supply and distribution system	○	○	●	●
Fire protection/saltwater supply systems	○	○	●	●
Storm water collection system	○	○	●	●
Sanitary collection system	○	○	●	●
Natural gas system	○	○	●	●
Electrical system	○	○	⊖	⊖
Telephone service	○	○	⊖	⊖
Solid waste disposal	○	○	⊖	⊖

Legend:

Significant Impact, Unmitigable



Significant Impact, Mitigable



Less Than Significant Impact



No Impact



4.10.1 Navy Disposal

The disposal of Federal property at HPS out of Federal ownership would not result in direct impacts to utilities. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.10.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Suggested infrastructure improvements for HPS originally were outlined in the *Draft Hunters Point Shipyard Reuse Infrastructure Backbone Project Plan* (City and County of San Francisco, Department of Public Works, Bureau of Engineering, 1996). Under this plan, the utilities infrastructure at HPS would be replaced wholesale with new utilities designed to support the proposed development (City and County of San Francisco, 1996). While the Backbone Plan is described as the most comprehensive way to achieve necessary utilities upgrades, an incremental approach may be more feasible. Both the wholesale and the incremental approach are addressed, where applicable, below.

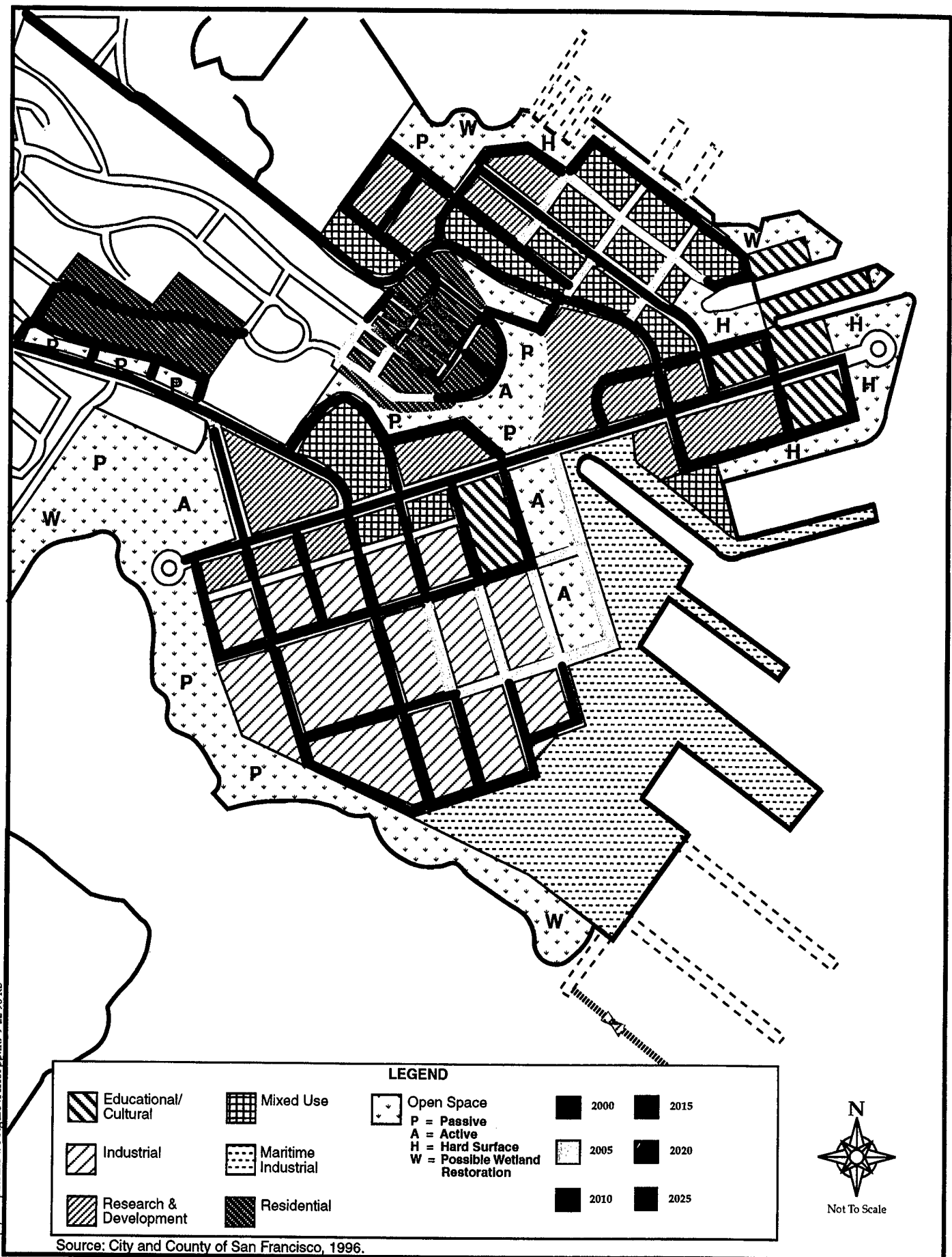
Under the Backbone Plan, an infrastructure backbone would be constructed for the entire site, including streets, median islands, sidewalks, gutters, traffic signing, irrigation systems and trees, electrical and lighting systems, alarm, auxiliary water supply systems and other fire protection work, sewer and storm water systems, gas mains, and electrical transmission lines. Utilities would be installed in phases before roadway or building construction, and individual site developers would be required to provide utility line connections along side streets and to their buildings. Figure 4.10-1 illustrates the utility infrastructure development plan for 2000 to 2025.

Significant and Mitigable Impacts

Impact 1: Potable Water Supply and Distribution System. Potable water demand at HPS would increase for consumption, irrigation, recreation, and fire prevention. Projections by the San Francisco Water Department indicate that the potable water supply would meet San Francisco's needs until 2020. Potable water requirements under the Proposed Reuse Plan would represent a small percentage of the City's overall water demand. However, because the potable water distribution system is approximately 55 years old and has deteriorated, it is inadequate to meet HPS water supply reuse requirements (City and County of San Francisco, Public Utilities Commission, 1998a).

One of the City's immediate concerns is to ensure that the domestic water system would operate in compliance with the Safe Drinking Water Act, 42 U.S.C. § 300(f) *et seq.* Currently, no California Department of Health Services (DOHS) permit is required to operate this system. However, following transfer, this system would be regulated under the City's DOHS permit.

Given this system's deteriorated condition, service deficiencies and potential drinking water quality impacts are anticipated.



Mitigation 1. Prior to authorization of reuse activities within a given area of HPS, assess deficiencies in the water distribution system and address them through planned infrastructure improvements or other actions.

As proposed under the *Draft Hunters Point Shipyard Reuse Infrastructure Backbone Project Plan* (City and County of San Francisco, Department of Public Works, Bureau of Engineering, 1996), replace the potable water distribution system with a new system built to meet demands of proposed development. This would ensure the supply of safe potable water and adequate water pressure. As an alternative to wholesale system replacement, the City could implement incremental improvements, including the following:

- In the upper housing area, cap the water distribution system and drain and abandon the 410,000-gallon (1.5-million liter) tank.
- Locate, excavate, and repair valves and lines. Replace PVC lines.
- Sample water at the point of consumption for chlorine, lead, and copper levels to ensure that it complies with the Safe Drinking Water Act.
- Install backflow preventors at the two San Francisco service points.
- Inspect service points for cross connections and for exposure to contamination so problems can be remediated, if needed.
- Install water meters to measure quantities delivered.

Implementing these measures would reduce this impact to a less than significant level.

Impact 2: Fire Protection/Saltwater Supply Systems. The potable water distribution system has insufficient pressure for fire protection in the former housing area. Hydrants throughout HPS also have pressures too low (2 to 3 pounds per square inch [0.9 to 1.4 kg per square cm]) for effective fire protection (U.S. Navy, 1998e) and are incompatible with City equipment (City and County of San Francisco, Public Utilities Commission, 1998a). In addition, the low-pressure saltwater system is inoperable. Inadequate fire protection capabilities could lead to increased fire hazards at HPS and would therefore be a significant and mitigable impact.

Mitigation 2. Prior to authorization of reuse activities within a given area of HPS, assess fire fighting deficiencies in the water systems and address them through planned infrastructure improvements or other actions. Construct a new auxiliary water supply system to augment the water supply for fire-fighting purposes, as proposed in the *Phasing*

Plan Draft (City and County of San Francisco, 1996). As an alternative to constructing a new system, the City may, in the interim, upgrade the existing potable water distribution system and fire hydrants to meet fire-fighting needs. Implementing these measures would reduce this impact to a less than significant level.

Impact 3: Storm Water Collection System. There may be increases in storm water volumes in certain segments of the system because paved surfaces in parts of HPS would increase with reuse. For example, a portion of an existing open space area in the southern half of HPS is proposed for maritime industrial uses. However, most existing open space at HPS is either paved or hard-packed, and therefore any increase in paved surfaces generally would be offset by proposed landscaping.

As described in Section 4.9, the sanitary sewer and storm water drainage systems would be upgraded and maintained by the City (Option 1), replaced with a new separated system (Option 2), or replaced with a new combined sanitary/storm system that discharges to the SEWPCP (Option 3). Design details of these options have not been determined, and this analysis is by necessity programmatic in nature. Any one of these options could incorporate a variety of refinements, including additional treatment, storage, or alternative technologies for handling storm water. For example, the wetlands proposed for Parcel B may benefit from storm water discharges to that area.

Storm water system deficiencies could be exacerbated if runoff volumes increase in any portion of the system. Localized flooding and overland flow during rain events also could conflict with reuse efforts. Significant but mitigable service deficiencies are anticipated. (See Section 4.9, Water Resources, for a discussion of potential HPS storm water quality impacts.)

Mitigation 3. Prior to authorization of reuse activities within a given area of HPS, assess deficiencies in the storm water collection system and address them through planned infrastructure improvements or other actions.

To mitigate impacts, implement the following measures:

- Upgrade or replace the storm water collection system as planned in each section of HPS prior to reuse, ensuring that all designs anticipate hydrologic changes occurring as a result of remediation.
- Restrict the amount of paved surfaces at HPS for no net increase.
- Install valves, gates, or duckbills at storm line discharge points to prevent tidal surges and movement of contaminated Bay Mud into the storm lines.

Implementing these measures would reduce the potential deficiencies to a less than significant level. (Potential impacts associated with additional CSO volumes are addressed in Section 4.9.)

Impact 4: Sanitary Collection System. Wastewater flows (dry-weather flows) at HPS would increase incrementally over current levels as a result of increased activity. Total daily wastewater generation at HPS (dry-weather flows) would be approximately 0.67 mgd (2.5 million liters a day), an increase of 170 percent over existing dry-weather flows. (Future anticipated wet-weather flows are discussed in Section 4.9, Water Resources.) Dry-weather flows generated under the Proposed Reuse Plan would not measurably affect the treatment capacity of the SEWPCP. However, given the deteriorated condition of the HPS sanitary collection system, significant but mitigable service deficiencies are anticipated.

Mitigation 4. Prior to authorization of reuse activities within a given area of HPS, assess deficiencies in the wastewater system and address them through planned infrastructure improvements or other actions. Construct a wastewater system at HPS to meet the Proposed Reuse Plan's wastewater needs prior to development. (See Section 4.9, Water Resources, for mitigation to reduce increased CSO discharges.) Implementing these measures would reduce potential deficiencies to a less than significant level.

Impact 5: Natural Gas System. Under the Proposed Reuse Plan, the demand for natural gas would increase at HPS. PG&E would be responsible for installing and maintaining natural gas service lines and connections. However, because the natural gas system is abandoned and no longer operates, significant but mitigable service deficiencies are anticipated.

Mitigation 5. Prior to authorization of reuse activities within a given area of HPS, assess deficiencies in the natural gas system and address them through planned infrastructure improvements or other actions. Construct a natural gas system according to Federal, state, and local codes to meet the Proposed Reuse Plan's needs. Implementing these measures would reduce this impact to a less than significant level.

Less Than Significant Impacts

Electrical System. The demand for electricity would increase under future land uses, such as industrial and commercial facilities, housing developments, and recreational projects. PG&E would be responsible for installing and maintaining electrical lines and connections. The City would be responsible for street lighting and lighting in other public areas. Significant service deficiencies are not anticipated. No mitigation is required.

Telephone Service. New telephone lines would be required to accommodate site development and changes in site configuration.

Pacific Bell would provide service up to the terminal connection at the entrance to HPS. Significant service deficiencies are not anticipated. No mitigation is required.

Solid Waste Disposal. The amount of solid waste generated by HPS would depend on the extent and nature of development. Building demolition activities would generate approximately 79,160 tons (71,798 metric tons) of solid waste, whereas construction activities would generate approximately 7,540 tons (6,838 metric tons) of solid waste during the 25-year build-out period.

The estimated amount of solid waste¹ generated after build-out of the Proposed Reuse Plan in 2025 would be approximately 10,480 tons (9,505 metric tons) per year, representing an increase of 10,456 tons (9,484 metric tons) annually. This increase would be approximately one percent of the total solid waste generated in San Francisco. These projections for demolition, construction, and operational solid waste do not include potential reductions from recycling and, therefore, are conservative estimates.

The amount of solid waste generated during HPS construction, demolition, and occupancy would be reduced by implementing aggressive recycling programs. By 2000, it is estimated that 75 to 90 percent of waste generated from business in the City and at HPS will be recycled (Maves, 1995). Therefore, solid waste generated by implementing the Proposed Reuse Plan would have a less than significant impact on the City's solid waste program. No mitigation is required.

Reduced Development Alternative

Under the Reduced Development Alternative, the amounts of potable water demand, storm water runoff, sewage, natural gas demand, electrical demand, telephone service demand, and solid waste would be less than under the Proposed Reuse Plan. For example, wastewater generation would be approximately 0.23 mgd (0.87 million liters per day) under the Reduced Development Alternative, compared to 0.67 mgd (2.5 million liters a day) under the Proposed Reuse Plan.

In addition, during construction, approximately 2,420 tons (2,195 metric tons) of solid waste¹ would be generated under the Reduced Development Alternative, compared to 7,540 tons (6,838 metric tons) under the Proposed Reuse Plan. During occupancy under the Reduced Development Alternative, approximately 4,050 tons (3,673 metric tons) per year of solid waste would be generated, whereas

¹ The amount of solid waste was estimated using solid waste generation factors provided by the City and County of San Francisco Administrative Services, Solid Waste Management Program.

approximately 10,480 tons (9,505 metric tons) per year would be generated under the Proposed Reuse Plan.

However, the Reduced Development Alternative would require the same utilities improvements and have the same significant and less than significant impacts and mitigation measures as discussed for the Proposed Reuse Plan.

**4.10.3 No Action
Alternative**

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, the Navy could continue existing leases (see Appendix C). No impacts on utilities are expected, and no mitigation is required.

4.11 PUBLIC SERVICES

The ROI for public services is HPS and the City.

Public service impacts would be considered significant if an alternative would result in any of the following:

- Substantial new or increased police services.
- Substantial new or increased fire protection services.
- Substantial new or increased emergency medical service.

Table 4.11-1 presents a summary of public services impacts and their level of significance.

TABLE 4.11-1: SUMMARY OF PUBLIC SERVICES IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Police services	○	○	①	①
Fire protection services	○	○	①	①
Emergency medical services	○	○	①	①

Legend:

Significant Impact, Unmitigable ●

Significant Impact, Mitigable ◐

Less Than Significant Impact ○

No Impact ○

4.11.1 Navy Disposal

The disposal of Federal property at HPS out of Federal ownership would not result in any direct impacts to public services. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal.

4.11.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Following disposal, City agencies would be solely responsible for providing public services to HPS. Law enforcement at HPS is currently under exclusive jurisdiction of the Navy. Retrocession of jurisdiction would occur upon disposal, giving the San Francisco Police Department (SFPD) law enforcement responsibility.

Less Than Significant Impacts

Police Services. Less than significant adverse impacts on police services are expected from this reuse alternative. To meet the increased demand for law enforcement under the Proposed Reuse Plan, the SFPD would add a new patrol car and 14 officers to the Bayview

Station (Hettrich, 1998). These additional officers represent only a 0.7 percent increase in the total number of SFPD officers and would be required immediately following transfer of HPS ownership from the Navy to the City. Because the staffing and equipment requirement would be based on the property's geographic area, not on the number of employees and residents, the same number of officers would be required for both 2010 and 2025. Increased police services would be provided to meet projected needs. No mitigation is required.

Fire Protection Services. Less than significant adverse impacts on fire protection services are expected from this reuse alternative. To serve HPS, the San Francisco Fire Department (SFFD) likely would add a minor number of personnel to its staff. The location of HPS relative to off-site fire stations may require the SFFD to staff the on-base station. Because staffing and equipment requirements would be based on the property's geographic area, not on the number of employees and residents, these requirements would be the same in both 2010 and 2025.

The potential impact associated with insufficient water pressure to meet fire fighting requirements is addressed in Section 3.10, Utilities. As proposed, the City would construct a new auxiliary water supply system to augment the water supply for fire-fighting purposes (City and County of San Francisco, 1996). However, as an alternative to constructing a new system, the City may, in the interim, upgrade the existing potable water distribution system and fire hydrants to meet fire-fighting needs. Increased fire-protection services would be provided to meet projected needs. No additional mitigation is required.

Emergency Medical Services. Less than significant adverse impacts on emergency medical services are expected from this reuse alternative. To serve HPS, the SFFD likely would add a minor number of paramedics to its staff. Paramedics would staff off-site SFFD fire stations or an on-base station. Because staffing and equipment requirements would be based on the property's geographic area, not on the number of employees and residents, these requirements would be the same in both 2010 and 2025. Increased emergency medical services would be provided to meet projected needs. No mitigation is required.

Reduced Development Alternative

Less than significant impacts to police, fire, and emergency medical services are anticipated from the Reduced Development Alternative. Because public service staffing and equipment requirements would be based on the property's geographic area, not on the number of

employees and residents, impacts resulting from this alternative would be the same as those described for the Proposed Reuse Plan.

**4.11.3 No Action
Alternative**

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, the Navy could continue existing leases (see Appendix C). The Navy would continue to be responsible for providing public services to HPS. No impacts on public services are expected, and no mitigation is required.

4.12 CULTURAL RESOURCES

The ROI for cultural resources is the HPS property. For purposes of this analysis, significant cultural resources are those properties listed or eligible for inclusion in the National Register of Historic Places (NRHP) and, in addition, for the purposes of CEQA, those properties that meet the definition of historical resources contained in CEQA § 21084.1.

As explained in Section 3.12, the Hunters Point Commercial Drydock Historic District and Drydock 4 have been determined eligible for inclusion in the NRHP by the Navy in consultation with the State Historic Preservation Officer (SHPO). The Hunters Point Commercial Drydock Historic District includes Drydocks 2 and 3 and the supporting Buildings 204, 205, 140 and 207. Because of the mammoth amount of cutting and filling required to dig Drydock 4 (5 million cubic yards [3.8 million cubic m]) and to create the land on which HPS is located, there is only a remote chance that the archeological remains of the previous prehistoric and historic uses of HPS have survived intact. All attempts to identify the location and find evidence of such deposits on the surface have failed. Nevertheless, should implementation of reuse plans require deep excavations, there is a remote potential for encountering intact archeology.

To evaluate the potential impact of the Navy's disposal of HPS and the subsequent reuse of the property, this analysis uses the criteria of adverse effect, as developed by the Advisory Council on Historic Preservation (ACHP) in its regulations for the "Protection of Historic Properties" (36 C.F.R. Part 800). These regulations define an adverse effect as an action that would diminish the integrity of a historic property's location, setting, design, materials, workmanship, feeling, or association. The regulations cite the following examples of effects that would be adverse:

- Destruction of or damage or alteration to all or part of the property.
- Isolation of the property or alteration of the character of the property's setting when that character contributes to the property's qualifications for the NRHP.
- Introduction of visible, audible, or atmospheric elements that are out of character with the property or changes that may alter its setting.
- Neglect of a property resulting in its deterioration or destruction.

- Transfer, lease, or sale of a property, without adequate provisions to protect the property's historic integrity.

ACHP regulations (36 C.F.R. Part 800) establish the process the Navy must follow in complying with Section 106 of the National Historic Preservation Act (NHPA). This legislative mandate requires the Navy to take into account the impact of the disposal of HPS and the indirect effect of that action, its proposed reuse. Should the Navy find, in consultation with the SHPO, that the disposal or subsequent reuse of HPS is likely to affect the historic properties identified as eligible for listing on the National Register, the Navy must afford the ACHP an opportunity to comment on the undertaking. If the undertaking is likely to adversely affect a NRHP listed or eligible property, ACHP regulations require the Navy to consult the ACHP staff, SHPO, and interested parties, which in this case includes the City and the Agency, to consider alternatives that would avoid or mitigate the potential adverse effects. When the consulting parties reach an agreement on a course of action that would accept, avoid, or mitigate the adverse effects, a formal memorandum of agreement (MOA) is executed. Implementation of the MOA satisfies Section 106 of the NHPA.

The Navy has determined that the disposal and reuse of HPS will affect historic properties eligible for inclusion in the NRHP and has initiated consultation with the SHPO, ACHP, City, and Agency. This consultation, which is expected to lead to a MOA, is proceeding in parallel with the preparation of this *Revised* Draft EIS/EIR, and its conclusion will be included in the Final EIS/EIR. The following discussion identifies the potential adverse effects and identifies courses of action being considered to avoid or mitigate the significant impacts.

Table 4.12-1 summarizes impacts on cultural resources and their level of significance.

TABLE 4.12-1: SUMMARY OF CULTURAL RESOURCES IMPACTS

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Transfer of property out of Federal ownership—historic resources	●	○	○	○
Alteration or demolition of historic resources	○	○	●	●
Incompatible new construction	○	○	●	●
Loss of unidentified archeological resources	○	○	●	●
Deterioration of historic property	○	●	⊕	⊕

Legend:

Significant Impact, Unmitigable

Significant Impact, Mitigable

Less Than Significant Impact

No Impact

**4.12.1 Navy Disposal****Significant and Mitigable Impact**

Impact 1: Transfer of Property out of Federal Ownership—Historic Resources. The transfer, lease, or sale of a significant historic property from Federal ownership without adequate restrictions or deed covenants to ensure its preservation would have an adverse or significant impact on the historic property, because it would lose the protection provided by Section 106 of the NHPA. This impact would apply to all NRHP-eligible properties described in Section 3.12 that are proposed for disposal to non-Federal parties.

Mitigation 1. The City and the Agency agree to implement the applicable measures contained in the MOA to ensure that equivalent protection is provided after transfer. The measures could include the following:

- Agreement by the City / Agency to designate NRHP-eligible buildings and structures as landmarks under San Francisco's own historic preservation ordinance or to prohibit demolishing these resources.
- Agreement by the City / Agency to require the use of the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* for all alterations proposed to historic resources identified as eligible for listing in the NRHP.

- Agreement by the City/Agency to inform future project developers of the potential for encountering archeological resources and the required procedures to be followed (see Mitigation 3).

Implementing these measures would ensure that the Navy's disposal actions would reduce this impact to a less than significant level.

4.12.2 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Many of the objectives and supporting policies contained in the Proposed Reuse Plan address the need to conserve and enhance historic resources at HPS. Applicable objectives and policies of the Proposed Reuse Plan related to cultural resources include the following:

Objective 11: Urban Design and Preservation

Create an attractive and distinctive visual character for HPS that respects and enhances natural features, the history, and the vision for mixed-use site development oriented towards arts and industrial uses.

Objective 12: Urban Design and Preservation

Conserve and enhance existing historic resources that provide continuity with the community's history and culture.

- Policy 2: Consider the preservation and potential adaptive reuse of historic buildings and structures around Drydocks 2 and 3 as a focus of the arts/cultural and mixed-use district.
- Policy 5: Consider the preservation and potential adaptive reuse of Drydock 4.
- Policy 6: Apply the nationally established and locally adopted Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings* (U.S. Department of the Interior, National Park Service, 1992) for the reuse of all buildings designated eligible for listing on the National Register of Historic Places and any other standards as set forth in state or City legislation.

Historic structures are specifically featured in the Lockwood Landing Area Urban Design Plan, which is included in the *Design for Development* (contained in Appendix D).

Significant and Mitigable Impacts

Impact 1: Alteration or Demolition of Historic Resources. It is anticipated that historic buildings and structures within the Hunters Point Commercial Drydock Historic District would be rehabilitated and

reused. Drydock 4 is currently leased and is expected to continue to be used in the ship breaking and repair business. However, a significant and mitigable impact would occur if this were not the case or if the rehabilitation and reuse were not done in a proper manner, causing inappropriate alterations or destruction of all or part of the property.

Mitigation 1. The Proposed Reuse Plan, *Hunters Point Shipyard Redevelopment Plan*, and associated *Design for Development* include requirements for retaining the historical resources described in Section 3.12. The Agency will also ensure that alterations that affect the historic resources are implemented according to the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*, as suggested by Proposed Reuse Plan Objective 12, Policy 6. Compliance with these requirements would ensure that potential significant impacts on historic resources would be reduced to a less than significant level.

Impact 2: Incompatible New Construction. Implementing the Proposed Reuse Plan likely would result in construction within the historic district or adjacent to identified historical resources. This construction could result in significant and mitigable impacts by introducing visual, audible, or atmospheric elements that are out of historic character with the property or that alter its setting.

Mitigation 2. The Agency would ensure that any construction within the Hunters Point Commercial Drydock Historic District comply with the policies set forth in the Proposed Reuse Plan, which calls for creating an attractive and distinctive visual character for HPS that respects and enhances the natural features, the history, and the vision for mixed-use development oriented toward arts and industrial uses (Objective 11). It further states that the structures around Drydocks 2 and 3 will be the focus of the arts/cultural and mixed-use district (Objective 12, Policy 2). Construction must also comply with applicable provisions of the Secretary of the Interior's *Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*. Implementing these policies would reduce the significance of this impact to a less than significant level.

Impact 3: Loss of Unidentified Archeological Resources. Ground disturbance during construction or demolition activities could unearth subsurface prehistoric and historic archeological resources. Upon discovery, if not properly evaluated and treated, important information about the history or prehistory of HPS could be lost. The loss of important archeological data is a significant and mitigable impact.

Mitigation 3. The Agency will require project contractors to be made aware of the potential for discovery of archeological resources. If development in the four subsurface zones identified as having the potential for containing significant archeological deposits involves construction or installation below the level of fill, retain a professional archeologist to develop a project-specific treatment or monitoring program. If archeological resources are discovered during construction at HPS, suspend all work in the immediate vicinity. Avoid altering the materials and their context pending site investigation by a qualified professional archeologist. If the qualified professional archeologist determines that the discovery is significant, notify the SHPO and ensure that an appropriate treatment plan is developed and implemented. Implementing these measures would reduce this impact to a less than significant level.

Less Than Significant Impact

Deterioration of Historic Properties. Implementing the Proposed Reuse Plan would increase the level of activity at HPS and is expected to include rehabilitation and reuse of identified historic properties. Public funding would not be available to maintain historic properties, so the attraction of private developers or leasees for these properties would be necessary to ensure that they do not deteriorate further. While historic properties risk deterioration until reuse is accomplished, this accomplishment is the goal of the Proposed Reuse Plan. Therefore, no significant impact is anticipated. No mitigation is required.

Reduced Development Alternative

Under this alternative, the Navy would dispose of the HPS property as described under the Proposed Reuse Plan. Impacts on cultural resources and their proposed mitigations would be the same as under the Proposed Reuse Plan.

4.12.3 No Action Alternative

Under the No Action Alternative, HPS would close but would remain Federal property under caretaker status and would not be reused or redeveloped. Under caretaker status, minimal activities needed to maintain the property and buildings would be conducted. Existing leases would continue until expiration but would not be renewed.

As long as the property remains under Navy control and jurisdiction, each action that affects a National Register resource will be reviewed under the requirements of Section 106 of the NHPA. Such reviews will conform to implementing regulations, 36 C.F.R. Part 800, that require consideration of alternatives to adverse actions, in consultation with the SHPO, ACHP, and other interested parties. While such review would not ensure preservation of the affected National Register resources, it would ensure that preservation alternatives are

considered. If a building or structure identified as contributing to the National Register-eligible historic district were to be demolished or substantially altered, it would be recorded to the standards of the Historic American Buildings Survey or the Historic American Engineering Record, as appropriate, for filing with the Library of Congress by the National Park Service. Archeologically sensitive areas would remain under the control and jurisdiction of the Navy, which would be responsible for complying with Section 106 and its implementing regulations prior to ground disturbance.

Significant Unmitigable Impact

Impact 1: Deterioration of Historic Property. Historic buildings (except for Drydock 4) have been boarded up to minimize vandalism. No further action would be taken to prevent deterioration. These buildings are severely deteriorated, and the Navy does not anticipate having resources to prevent their further deterioration.

In the case of Drydock 4, in anticipation of irreversible deterioration, a MOA was executed with the SHPO and ACHP accepting its loss. A similar agreement would be sought for the Commercial Drydock Historic District.

4.13 BIOLOGICAL RESOURCES

The ROI for biological resources includes HPS and areas of native habitat within a half mile (0.8 km) of the facility, including Yosemite Slough, Candlestick Point State Recreation Area, Bayview Park, and Pier 98. Impacts to biological resources would be significant if an alternative would result in any of the following:

- Endangered or threatened species (including proposed species and Category 1 candidate species) are harmed, harassed, or destroyed.
- Endangered or threatened species' habitat, migration corridors, or breeding areas are modified or destroyed.
- A substantial number of individuals of any plant or animal species (sensitive or nonsensitive species) are lost, affecting the abundance or diversity of that species beyond normal variability.
- Sensitive habitats, including wetlands habitat, are degraded measurably.

Table 4.13-1 provides a summary of biological impacts and their significance.

**TABLE 4.13-1:
SUMMARY OF BIOLOGICAL RESOURCES IMPACTS**

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Increased human activity near sensitive habitats	○	○	◐	◐
Increased litter	○	○	◐	◐
Increased runoff into sensitive habitats	○	○	◑	◑
Additional waterfowl and shorebird habitats	○	○	◑	◑
Threatened or endangered avian species	○	○	◑	◑
Threatened or endangered fish species	○	○	◑	◑
Nonlisted sensitive species and common wildlife	○	○	○	○

Legend:

Significant Impact, Unmitigable

Significant Impact, Mitigable

Less Than Significant Impact

No Impact



- 4.13.1 Navy Disposal** The disposal of Federal property at HPS out of Federal ownership would not result in any direct impacts to sensitive or nonsensitive species or habitats. However, the direct impacts of reuse, described below, would be the indirect impacts of disposal. Impacts to ecological receptors from remediation activities are discussed in Section 4.7, Hazardous Materials and Waste.
- 4.13.2 City of San Francisco Reuse Alternatives**
- Proposed Reuse Plan***
- Significant and Mitigable Impacts**
- Impact 1: Increased Human Activity Near Sensitive Habitats.* There are six small, unconnected tidal and nontidal wetlands along the Bay at HPS. In total, the wetlands occupy less than 10 acres (4 ha). These wetlands, along with the mudflats and aquatic habitats at HPS, nearby Candlestick Point Recreation Area, and Pier 98, provide some of the most valuable habitat for waterfowl and shorebirds along the western shore of the central Bay. Four small wetland areas would be developed at HPS under the Proposed Reuse Plan, providing additional habitat for waterfowl, shorebirds, and aquatic wildlife.
- Implementation of the Proposed Reuse Plan would increase activity at HPS, increase public access, and extend trails along the waterfront. This access would increase human and domestic animal activity along the HPS shoreline, thereby potentially reducing the wetlands' habitat value for waterfowl and shorebirds. An increase in the number of people using these areas also could increase disturbances to these sensitive habitats, both directly from their going off-trail and indirectly from noise and movement. Similarly, an increase in uncontrolled domestic animal activity could directly impact wetland-dependent species by increasing losses from predation.
- Mitigation 1.* Place barriers along the Bay side of trails to reduce human and domestic animal disturbances to sensitive wetland habitats. Design barriers so that wildlife cannot hear or see people from foraging areas and so that people cannot easily leave trails to enter sensitive wildlife areas. In addition, develop and implement a public access program to include fencing sensitive areas, posting signs, and imposing leash requirements to further reduce disturbance to wetland areas. Implementing these measures would reduce this potential impact to a less than significant level.
- Impact 2: Increased Litter.* Implementation of the Proposed Reuse Plan would increase activity along the HPS shoreline and could increase the likelihood of litter. Litter blown or thrown into wetlands or the Bay would pose a choking and feeding hazard to aquatic wildlife and shorebirds.
- Mitigation 2.* Provide adequate trash receptacles along public access areas. Ensure pick-up and trash receptacle maintenance on a regular

basis. Implementing these measures would reduce this potential impact to a less than significant level.

Less Than Significant Impacts

Increased Runoff into Sensitive Habitats. HPS reuse would be subject to California Department of Fish and Game (CDFG) wetland policies and the Clean Water Act (CWA), as well as state and local regulations. Compliance with these regulations would reduce potential impacts to a less than significant level. No mitigation is required.

Additional Waterfowl and Shorebird Habitats. Developing four proposed wetland areas at HPS would provide additional habitat for waterfowl, shorebirds, and aquatic wildlife. This is considered a beneficial impact. To maximize these beneficial biological effects, design and construct the proposed wetlands to contain functions and values similar to those exhibited by existing wetlands. No mitigation is required.

Threatened or Endangered Avian Species. As described in Section 3.13, sensitive avian species, such as the peregrine falcon, western snowy plover, California clapper rail, California black rail, brown pelican, California least tern, and Swainson's hawk, may pass through or occasionally forage at or near HPS. However, no potential nesting habitat was found for these avian endangered or threatened species at HPS. Foraging opportunities would remain in open space areas. Therefore, no significant impacts would be expected to occur to these species from reuse activities. No mitigation is required.

Threatened or Endangered Fish Species. Sensitive fish species, such as stray Chinook salmon and stray steelhead trout, may infrequently transit the waters off the HPS shoreline during migration periods. However, there is no critical offshore habitat for these species at HPS or in offshore areas of the ROI. Therefore, no significant impacts would be expected to occur to these aquatic species from reuse activities. No mitigation is required. (Also see Section 4.9, Water Resources.)

Nonlisted Sensitive Species and Common Wildlife. No significant impacts are expected to occur to nonsensitive species and species with lesser protections, including common wildlife, because a substantial number of individuals of any population of these species are unlikely to be notably affected by proposed reuse activities. No mitigation is required.

Reduced Development Alternative

Although less intense development would occur under the Reduced Development Alternative, the impacts on biological resources and the recommended mitigations would be the same as those described for the Proposed Reuse Plan.

**4.13.3 No Action
Alternative**

Under the No Action Alternative, HPS would remain a closed Federal property under caretaker status and would not be reused or redeveloped. However, under this alternative, the Navy could continue existing leases. No impacts to biological resources are expected, and no mitigation is required.

4.14 ENERGY

The ROI for energy consumption is HPS. Energy consumption impacts could occur through changes in the consumption level of electricity and fossil fuel. The impact on energy resources could be significant if fuel or energy is used in large amounts or is used wastefully. Note that energy consumption is only a requirement of CEQA, in accordance with the state CEQA Guidelines, Cal. Admin. Code § 15000 *et seq.*, and is therefore not evaluated for Navy actions.

Table 4.14-1 provides a summary of energy consumption impacts and their significance.

**TABLE 4.14-1:
SUMMARY OF ENERGY CONSUMPTION IMPACTS**

IMPACTS	NAVY ACTIONS		CITY OF SAN FRANCISCO REUSE	
	Navy Disposal (Direct Effects)	No Action Alternative	Proposed Reuse Plan	Reduced Development Alternative
Energy use	N/A ¹	N/A ¹	○	○

¹ Energy consumption is a CEQA-only requirement in accordance with the state CEQA Guidelines, Cal. Admin. Code § 15000 *et seq.*

Legend:

Significant Impact, Unmitigable ●

Significant Impact, Mitigable ◐

Less Than Significant Impact ○

No Impact ○

4.14.1 City of San Francisco Reuse Alternatives

Proposed Reuse Plan

Implementing the Proposed Reuse Plan would result in the consumption of energy in the form of electricity, natural gas, and fuel (gasoline and diesel), both during construction and operations. Equipment used during construction and demolition activities at HPS would use petroleum fuels, such as gasoline and diesel. However, this temporary energy expenditure would occur over the short term and would not substantially increase the overall demand for electricity or natural gas at HPS.

Implementing the Proposed Reuse Plan also would increase the amount of energy consumed for lighting, heating, air conditioning, and other operational uses of energy. Total land use development under the Proposed Reuse Plan in 2025 is estimated at about 4,952,600 square feet (460,112 square m). However, new buildings and facilities generally would be more energy-efficient than older buildings. Implementing the Proposed Reuse Plan also would increase

consumption of petroleum fuels by generating additional vehicle trips. The Proposed Reuse Plan would generate about 21,832 new daily vehicle trips in 2025 (see Table 4.1-2 in Section 4.1).

Although energy consumption for buildings and automobiles would increase, no impacts for energy consumption would result. New development at HPS would be required by law to comply with either the prescriptive or performance requirements of the state's energy efficiency standards, 24 C.C.R. §§ 140-148, 151. Compliance with the standards would be enforced by the San Francisco Department of Building Inspection, through the building permit review process, and would ensure that there would be little or no wasteful or excessive energy use, if feasible.

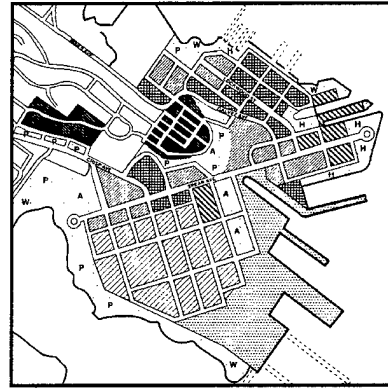
Furthermore, operational energy consumption could be reduced by a variety of design measures. Many of these measures have been documented by the San Francisco PUC, Bureau of Energy Conservation for land use projects. Possible energy-efficient design measures include district heating and cooling systems, energy-efficient equipment and appliances, reduced lighting, natural cooling, passive solar space heating, energy management and control systems, individual metering, cogeneration, landscaping and building orientation for wind, and optimized glazing.

Reduced Development Alternative

Energy consumption impacts under the Reduced Development Alternative would be similar to but less than those described above for the Proposed Reuse Plan. Total land use development under the Reduced Development Alternative is approximately 1,695,000 square feet (157,471 square m), about 66 percent less than under the Proposed Reuse Plan. Similarly, the Reduced Development Alternative would generate about 10,000 new daily vehicle trips in 2025, approximately 11,832 fewer trips compared to the Proposed Reuse Plan. No energy impacts would result because new development would be required by law to comply with the state's energy efficiency standards.

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5 Other Considerations



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5. OTHER CONSIDERATIONS

This chapter addresses additional topics required specifically by the National Environmental Policy Act (NEPA) or the California Environmental Quality Act (CEQA) to be included in an Environmental Impact Statement/Environmental Impact Report (EIS/EIR). These include unavoidable adverse impacts to the environment, irreversible and irretrievable commitments of resources, the relationship between local short-term uses of the environment and its long-term productivity, cumulative impacts, and growth-inducing impacts. Issues related to Environmental Justice, in accordance with Executive Order 12898, 59 Fed. Reg. 7629 (1994), and issues related to the Protection of Children from Environmental Health Risks and Safety Risks, in accordance with Executive Order 13045, 62 Fed. Reg. 19885 (1997), also are presented.

5.1 UNAVOIDABLE ADVERSE IMPACTS

An EIS/EIR must describe any significant unavoidable adverse environmental impacts for which either no mitigation or only partial mitigation is feasible. In San Francisco, significant impact findings are subject to final determination by the Planning Commission and the San Francisco Redevelopment Agency Commission as part of the EIR certification process. This chapter in the Final EIS/EIR will be amended by resolution, if necessary, to reflect the findings of the Planning Commission and the Redevelopment Agency Commission.

In general, unavoidable adverse effects can be described in two categories. The first includes impacts that would be attributable to the project itself, and the second includes cumulative impacts to which the project would contribute some increment. Project-specific impacts have been projected at a programmatic level of detail based on information presented herein regarding the environmental setting and the proposed project alternatives. Cumulative effects are by their nature more speculative, because their analysis depends upon predicting possible future environmental changes beyond the scope of the proposed project.

Transportation, Traffic, and Circulation

The Proposed Reuse Plan and Reduced Development Alternative for Hunters Point Shipyard (HPS) would each contribute to cumulative significant and unavoidable transportation, traffic, and circulation impacts. HPS reuse would contribute approximately 19 percent to the total cumulative traffic volume at the Third Street and Cesar Chavez Street intersection under the Proposed Reuse Plan. This intersection would operate at level of service (LOS) F in 2015 under both the Proposed Reuse Plan and the Reduced Development Alternative,

because the Third Street Light Rail Transit (LRT) project would reduce one through traffic lane in each direction on portions of Third Street. This would result in a significant cumulative traffic impact.

Traffic associated with both the Proposed Reuse Plan and Reduced Development Alternative would contribute to cumulatively significant increased traffic congestion along U.S. 101 at the county line and along I-280 south of U.S. 101. HPS reuse would contribute approximately two percent or less to total cumulative traffic volumes on these freeway segments. Assuming completion of the Candlestick Point Stadium and Retail/Entertainment Center and other cumulative projects, freeway mainline LOS at both these locations would operate at LOS F during the P.M. peak hour in 2015. Since there is no plan to increase the freeway mainline capacity at both these locations, this cumulative impact would be significant.

Both of the cumulative significant impacts described above would be partially mitigated through implementation of proposed Transportation Demand Management (TDM) measures, including measures to encourage transit use, expand transit service as necessary, and constrain on-site parking. These measures would somewhat decrease the project's contribution to cumulative congestion on local streets and freeways, but the significant cumulative effects would remain unavoidable.

Air Quality

Unavoidable adverse project impacts are identified for air quality associated with the Proposed Reuse Plan and the Reduced Development Alternative. Vehicle travel would result in an increase in emissions of ozone precursors and traffic-related airborne particulate matter less than 10 microns in diameter (PM₁₀) above the Bay Area Air Quality Management District (BAAQMD) significance threshold of 80 pounds (36 kg) a day. Ozone precursor and traffic-related PM₁₀ emission impacts apply to the Proposed Reuse Plan in 2010 and 2025. Under the Reduced Development Alternative, ozone precursor and traffic-related PM₁₀ emissions would similarly be an unavoidable adverse impact in 2010 and 2025. The vehicle emissions analysis already assumes a substantial amount of ridesharing, transit use, and nonvehicular travel modes, which would be met by implementing the Transportation Demand Management (TDM) mitigation strategy outlined in Section 4.1. The effectiveness of the TDM measures cannot be predicted with certainty, and the impacts would remain significant and unavoidable.

Vehicle trips generated under the Proposed Reuse Plan and Reduced Development Alternative would also cause motor vehicle exhaust and evaporative emissions, known sources of toxic air contaminants.

These emissions, together with emissions from development throughout San Francisco and the Bay Area, could increase the risks associated with toxic air contaminants, although the significance of these cumulative emissions is unknown. In the absence of a definitive determination of significance, toxic air contaminants from vehicle travel associated with these alternatives and cumulative sources are conservatively assumed to be a potentially significant and unavoidable cumulative effect. Mitigation proposed would reduce but not eliminate this impact by controlling future emissions from stationary sources at HPS.

Cultural Resources

Under the No Action Alternative, the deterioration of historic property would continue. Historic buildings (except Drydock 4) have been boarded up to prevent vandalism. No further action would be taken to prevent their deterioration. The Navy would seek agreement from the State Historic Preservation Officer and the Advisory Council on Historic Preservation to accept the loss of significant historic properties. This would be a significant and unavoidable adverse impact.

All other potentially significant project and cumulative impacts of the reuse alternatives would be mitigable to a less than significant level by implementing mitigation measures recommended in this EIS/EIR.

5.2 IRREVERSIBLE/IRRETRIEVABLE COMMITMENTS OF RESOURCES

NEPA and CEQA require that an EIS/EIR analyze the extent to which the primary and secondary effects of the alternatives under consideration would commit nonrenewable resources to uses that future generations would be unable to reverse. Navy disposal of HPS increases options for site use and for responsible long-term resource management and makes no resource commitments.

Implementing the Proposed Reuse Plan and the Reduced Development Alternative would require a significant commitment of both renewable and nonrenewable energy and material resources for demolishing and constructing structures and infrastructure. Developing the site according to the Proposed Reuse Plan or the Reduced Development Alternative would commit HPS to that general set of uses for the foreseeable future.

As described in Section 4.14, Energy, the increase in development would likely result in an increase in the annual amount of energy consumed in heating, air conditioning, and other operations uses of energy. However, development would be required to comply with either the prescriptive or performance requirements of the state's

energy efficiency standards, Title 24 of the California Code of Regulations (24 C.C.R.) §§ 140-148, 151 (1995). Compliance with the standards would be enforced by the San Francisco Department of Building Inspection, through the building permit review process, and would ensure that there would be little or no wasteful or excessive energy use, if feasible.

5.3 SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

An EIS must describe the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity. Special attention is given to effects that might limit the range of beneficial uses of the environment or pose long-term risks to health and safety.

Implementing the Proposed Reuse Plan or Reduced Development Alternative would cause short-term impacts associated with construction. There would be both short-term and long-term beneficial effects, including an increase in employment and related economic activity and increased public access to open space and the shoreline. The Proposed Reuse Plan would enhance long-term productivity, resulting in increased employment in the area and other improvements in economic activity, housing, and infrastructure. Consequently, the project's short-term impacts on the natural environment would be minimal in relation to the positive effects on long-term human productivity in the area.

5.4 CUMULATIVE IMPACTS

5.4.1 Regional Projections

Cumulative impacts are individual effects that, when considered together, could create a collective impact that is significant. Such individual effects include "closely related past, present and reasonably foreseeable probable future projects" (CEQA Guidelines § 15355). CEQA documents include a discussion of potential cumulative effects when those effects are significant, and state CEQA guidelines suggest two possible methods for assessing potential cumulative effects (State CEQA Guidelines § 15130). The first method is a list-based approach, which considers a list of past, present, and reasonably foreseeable future projects producing related or cumulative impacts. The second method is projections-based and uses a summary of projections contained in an adopted general plan or related planning document designed to evaluate regional or area-wide conditions. The projections-based method is generally used by the City and County of San Francisco (City) in evaluating projects within its jurisdiction.

Growth forecasts for 2010 used in this EIS/EIR analysis were developed by the Association of Bay Area Governments (ABAG) and

were based on anticipated land use and demographic patterns described in ABAG's *Projections '94* report, as reflected in MTC's travel forecast model. ABAG has since produced its *Projections '96* and *Projections '98* reports, and the Agency has completed an effort to revise City-wide projections of future growth based on its own assessment of foreseeable development by analysis year 2105. Some of these projections are compared in Table 5.4-1, Table 5.4-2, and Table 5.4-3.¹

The Metropolitan Transportation Commission (MTC) travel model is composed of 721 travel analysis zones (TAZs) for the nine-county San Francisco Bay Region. The TAZ is the basic geographic unit of a travel demand model system. It is a homogeneous geographical area where trips are produced or attracted. The MTC TAZs are consistent with Census Bureau geographical units (census tracts) and vary in size based on tract size and number and land use intensity. For example, within downtown San Francisco, TAZs generally are smaller (between 10 and 15 street blocks) due to concentrated high employment. A map identifying specific TAZs in the HPS project vicinity is included in Appendix B, Figure B-2.

Population projections in *Projections '94* (forecast year 2010), compared to Agency data (forecast year 2015), indicate that about six percent fewer people are projected to be living in the HPS area (TAZs 367 through 371) by build-out than contemplated in this EIS/EIR. Because the area is likely to grow more slowly than anticipated, population-generated cumulative impacts described herein probably are somewhat overstated.

According to Agency data for 2015, employment in the area is predicted to be approximately 12 percent higher (5,288 more jobs) than earlier thought. Some portion of this increase can be attributed to development projected at the end of the forecast period (i.e., between 2010 and 2015). Also, TAZ 367, the Candlestick area, accounts for more than the total job increase in the entire area, offsetting the

¹ The San Francisco Redevelopment Agency's (Agency's) cumulative projections are described in a background report that is available for review at the San Francisco Planning Department and the San Francisco Redevelopment Agency. The Agency's cumulative scenario is similar in some ways to ABAG *Projections '98* and is used in lieu of ABAG projections for analyzing major projects within San Francisco. For example, the Mission Bay analysis and the Third Street LRT project analysis were both based on the Agency's cumulative scenario.

**TABLE 5.4-1:
COMPARISON OF CITY-WIDE CUMULATIVE GROWTH PROJECTIONS**

	ABAG PROJECTIONS '94		ABAG PROJECTIONS '98			AGENCY CUMULATIVE	
	1995	2010	1995	2015	2020	1995	2015
Employment	394,200	441,600	534,610	663,900	679,654	543,600	665,300
Population	766,300	819,000	751,700	801,400	793,394	759,900	819,500

Sources: ABAG, 1993, 1997; Keyser Marston Associates, Inc., 1997, 1998.

**TABLE 5.4-2:
PROJECTED POPULATION IN THE HPS AREA**

Traffic Analysis Zone (TAZ)	ABAG '94 (2010)	ABAG '96 (2015)	94-96 Δ	'96/'94	SFRA '97 (2015)	94-97 Δ	'97/'94	96-97 Δ	'97/'96
367	9,258	7,570	-1,688	82%	7,571	-1,687	82%	+1	100%
368	4,755	3,227	-1,528	68%	5,844	+1,089	123%	+2,617	181%
369	16,216	14,653	-1,563	90%	14,678	-1,538	91%	+25	100%
370	20	630	+610	3150%	237	+217	1185%	-393	38%
371	13,053	12,216	-837	94%	12,405	-648	95%	+189	102%
Subtotals	43,302	38,296	-5,006	88%	40,735	-2,567	94%	+2,439	106%
372	19,717	19,772	+55	100%	N/A	N/A	N/A	N/A	N/A
542	19,214	19,893	+679	104%	N/A	N/A	N/A	N/A	N/A
Totals	82,233	77,961	-4,272	95%	N/A	N/A	N/A	N/A	N/A

Sources: ABAG, 1993, 1995; Keyser Marston Associates, Inc., 1997, 1998.

**TABLE 5.4-3:
PROJECTED EMPLOYMENT IN THE HPS AREA**

TAZ	ABAG '94 (2010)	ABAG '96 (2015)	94-96 Δ	'96/'94	SFRA '97 (2015)	94-97 Δ	'97/'94	96-97 Δ	'97/'96
367	7,727	7,046	-681	91%	13,592	+5,865	176%	+6,546	193%
368	2,075	2,026	-49	98%	6,108	+4,033	294%	+4,082	301%
369	4,738	4,584	-154	97%	4,346	-392	92%	-238	95%
370	23,805	23,373	-432	98%	20,754	-3,051	87%	-2,819	89%
371	6,172	5,972	-200	97%	5,005	-1,167	81%	-967	84%
Subtotals	44,517	43,001	-1,516	97%	49,805	+5,288	112%	+6,804	116%
372	1,737	1,698	-39	98%	N/A	N/A	N/A	N/A	N/A
542	1,615	1,670	+55	103%	N/A	N/A	N/A	N/A	N/A
Totals	47,869	46,369	-1,500	97%	N/A	N/A	N/A	N/A	N/A

Sources: ABAG, 1993, 1995; Keyser Marston Associates, Inc., 1997, 1998.

Δ = Change in parameter over the years indicated

N/A = Not Available or Not Applicable

TAZ = Travel Analysis Zone

decreases in other zones. By dropping TAZ 367 from the analysis, employment in 2015 would be about two percent below that predicted for 2010 in *Projections '94*. While the new Candlestick Point Stadium and Retail/Entertainment Center development is expected to be built out by 2010, secondary employment generators are not. The employment gains anticipated by Agency data for 2015 would not all be realized by 2010, the build-out year evaluated in this EIS/EIR.

Based on the above considerations and the inherent uncertainty of any projections of future growth, it is clear that, despite the newer data for 2015, data in *Projections '94* and in this report satisfactorily represent estimated future cumulative growth in the southeast quadrant of San Francisco. To ensure further consistency with other City project analyses (e.g., Mission Bay and Third Street LRT) and adequate consideration of potential cumulative effects of the Candlestick Point Stadium and Retail/Entertainment Center development, this *Revised Draft EIS/EIR* also compares transportation, water quality, and other data available from these other analyses, making adjustments where necessary (see Sections 4.1 and 4.9).

Because this document is based on regional projections and assumes transportation improvements programmed within the same time frame, project effects include the cumulative effects of regional development. Thus, additional analysis of potential cumulative effects related to specific development and programmed transportation improvement projects within the region is not necessary. Project effects presented in Chapter 4 already present cumulative conditions for the following impact categories: land use; transportation, traffic and circulation (including transit); air quality; noise; and water quality. Some of these issues are considered further in Section 5.4.3, as they relate to the possible reconfiguration of the ring road around Candlestick Point and the Yosemite Slough bridge, both reasonably foreseeable transportation projects that have not yet been programmed by MTC.

5.4.2 Reasonably Foreseeable Future Projects

Potential cumulative effects are not always regional in scope, so the HPS project was analyzed to evaluate whether less than significant environmental effects that would be experienced locally could become significant when considered with other reasonably foreseeable future projects in the project vicinity.

Anticipated land use changes in the area include those associated with the proposed Bayview-Hunters Point redevelopment area and the newly approved Giants baseball stadium at China Basin. These projects are taken into account in considering cumulative future development in the HPS vicinity. The new Mission Bay development plan incorporating a UCSF campus and the Candlestick Point Stadium

and Retail/Entertainment Center development proposal also are considered. Major infrastructure projects considered foreseeable include the completion of the San Francisco Municipal Railway (MUNI) Third Street LRT project, reconfiguration of roads surrounding 3Com Park into a ring road, and construction of a bridge across Yosemite Slough, coupled with constructing an extension of Carroll Avenue between Third Street and Bayshore Boulevard to improve access to U.S. 101. Removing the Hunters Point Power Plant has not been considered because it would primarily result in environmental benefits, rather than impacts.

5.4.3 Potential Cumulative Impacts

When considered in the context of regional population and employment projections, the Proposed Reuse Plan and Reduced Development Alternative would contribute to cumulatively significant and unmitigable traffic impacts, including congestion at local intersections and on regional freeways, as described in Section 4.1. The increase in traffic (mobile source) emissions and the potential increases in stationary source emissions could contribute to cumulative significant and unmitigable air quality impacts related to toxic air contaminants, as described in Section 4.2.

The following discussion does not repeat information and analysis related to these potentially significant cumulative effects described in Chapter 4; instead, it focuses on potential reuse effects, combined with remediation activities under the LIFOC and §334 early disposal options, and potential reuse effects when combined with the proposed Yosemite Slough bridge, Carroll Avenue extension, and road reconfiguration around 3Com Park. The potential for cumulative construction-period effects also is discussed.

Concurrent Reuse and Remediation. As described in Chapter 2, Navy disposal may occur as a total transfer following completion of remediation activities, or it may take the form of a phased or early transfer, which would allow reuse to occur simultaneously with remediation activities. (The potential for remediation activities to affect new receptors introduced by the reuse alternatives is described in Section 4.7.) Under the phased or early transfer scenarios, increased activities associated with reuse could occur at the same time as remediation activities, and trucks traveling to and from the site for remediation purposes (estimated at 40 to 60 truck trips per day on average, with a maximum of approximately 150 truck trips per day) would mix with vehicles accessing the site for reuse purposes (conservatively estimated at a maximum of 50 trucks in the P.M. peak hour in 2010).

Build-out of the Proposed Reuse Plan is likely to occur over time, as demonstrated by the market analysis (Sedway & Associates, 1995)

contained in Appendix B. In the first years of reuse, when remediation is ongoing, activity levels are projected to be a small percentage of those expected in 2010 or 2025. As reuse activities are initiated, vehicle trips associated with new residents and employees would mix with traffic associated with building demolition and new construction, which would also be staggered based on demand.

The combined activities associated with remediation and partial reuse would be unlikely to exceed the 5,580 daily vehicle trips projected to occur by 2010 or the 10,000 vehicle trips projected to occur by 2025. Thus, the resulting cumulative effect would be less than or roughly equivalent to the project and cumulative traffic impacts analyzed in Section 4.1, although they could occur at a somewhat earlier date than projected.

Members of the community have suggested that residents of Bayview-Hunters Point who work at HPS under the Proposed Reuse Plan may be exposed to health risks because of the likelihood that they are exposed to potential sources of environmental contamination in their residential neighborhoods. In other words, these community representatives fear the cumulative effect of one population being exposed to environmental degradation at more than one location (at home and at work), because the level of remediation under the Installation Restoration Program (IRP) for non-residential areas was based on an assessment of risk assuming less than 24-hour exposure. While this concern may inform discussions with the U.S.

Environmental Protection Agency (U.S. EPA) regarding the IRP risk assessment process in general, it would be speculative to conclude that a significant cumulative environmental impact would result in this particular instance. The current analysis cannot speculate on the nature of risk in other areas of the City or the Bay Area, nor on the precise composition of the future HPS work force (place of residence, general health, age, etc.). Furthermore, the increased awareness of hazardous materials issues in the Bayview-Hunters Point neighborhood is expected to result in a diminution of risk in that neighborhood, as projects such as the removal and/or replacement of PG&E's Hunters Point Power Plant are implemented. Other potential responses to this community concern, such as limiting HPS employment, would not be consistent with the objectives of reuse.

Reuse Impacts Combined with Potential Roadway Network Changes. In conjunction with developing the Candlestick Point Stadium and Retail/Entertainment Center, reconfiguring the roadways surrounding 3Com Park is proposed. If implemented, the new roadway configuration would include a new five- to seven-lane ring road encircling the stadium and mall, with signalized "T" intersections at Harney Way, Gilman Avenue, and Carroll Avenue and a stop sign-

controlled intersection at Ingerson Avenue. Primary freeway access would be via Harney Way, where intersection and interchange improvements could be warranted by projected cumulative traffic increases. Operating the ring road would be modified on football game days to provide one-way access and egress around the ring.

In addition to these circulation changes, the Agency is considering constructing a bridge across Yosemite Slough, along with extending Carroll Avenue between Third Street and Bayshore Boulevard. These proposals are still under study and would primarily improve access and egress from HPS to and from the south.

Based on data obtained from the MTC regional travel model and the City-wide Travel Behavior Survey (City and County of San Francisco, 1993a and 1993b), it is estimated that most trips associated with HPS reuse activities would originate or terminate in San Francisco (74.5 percent), with the remaining trips beginning or ending in the North Bay (2.7 percent), East Bay (7.8 percent), or South Bay (15 percent). Based on this distribution pattern, it is estimated that most reuse traffic (about 80 percent) would continue to use the Evans Avenue North Gate, whether or not the Yosemite Slough bridge is constructed. Daily traffic expected to use the South Gate would be spread over the day, with most traffic concentrated in the P.M. peak hour (about 336 vehicle trips in 2010). These vehicles would have various options for accessing the bridge and could incrementally increase traffic on affected routes, such as Griffith Street, Carroll Avenue, the Candlestick Point ring road, and Harney Way; however, vehicles at severely congested intersections, such as Harney Way/Alana Way, that are attributable to HPS would be unlikely to exceed five percent of the total traffic volumes at these locations. Concurrent, incremental decreases in traffic volumes would be experienced along Evans Avenue and sections of Third Street.

The Candlestick Point Stadium and Retail/Entertainment Center development could use HPS for game day parking for about two years when the new stadium is under construction and the existing stadium (3Com Park) is open for ball games. During this period, it is anticipated that most of the parking spaces at 3Com Park would be displaced. In the worst-case situation, these spaces would be temporarily replaced in several locations. HPS is one of the sites being considered, but the total number of spaces or acreage needed is not yet defined.

If HPS is considered for game day parking during the construction period, HPS access would be either from Evans Avenue (North Gate) for vehicles from the north or from Crisp Avenue (South Gate) for vehicles from the south. Access to the North Gate would most likely

be via Third Street and Evans Avenue. Potential cumulative traffic impacts include additional queuing of vehicles turning left from Third Street to Evans Avenue. Long traffic queues are expected during the peak inbound period. In addition, the Third Street LRT project is expected to be under construction during this period. The Third Street LRT project would remove one travel lane in each direction along portions of Third Street and, consequently, would aggravate already congested traffic conditions.

Access to the Crisp Avenue South Gate would be from both Third Street (via the Third Street ramp) and Hunters Point Parkway (via the Harney Way ramp). Potential cumulative traffic impacts would include intrusions into the east-west direction residential streets from Palou to Carroll Avenues. However, other residential streets, such as Gilman, Ingerson, and Jamestown Avenues, would benefit from the reduced traffic to and from the stadium.

Reuse Impacts Combined with Other Construction Activities in the Area. Construction effects are by definition temporary and intermittent and are seldom considered cumulatively significant for this reason. Cumulative construction impacts (noise, air quality, lighting, road closures, and heavy truck traffic) resulting from the new Candlestick Point Stadium and Retail/Entertainment Center, Third Street LRT, and other projects, when combined with the HPS reuse project, would affect areas immediately adjacent to construction activities at each project site. These effects could include increased potential for noise, dust, and inconveniences associated with construction activities. All large construction projects would be required to comply with noise and dust suppression controls, such that localized effects, even when experienced due to several projects, would not be significant. Traffic congestion and transit delays are frequently associated with construction activities in urban areas and would be of longer duration due to the multiple projects under construction. The San Francisco Municipal Railway (MUNI), Department of Parking and Traffic, and other City agencies would coordinate these large projects and minimize delays to the extent feasible.

5.5 GROWTH-INDUCING IMPACTS

CEQA requires a discussion of the ways in which a proposed action could induce economic, population, or housing growth, either directly or indirectly, in the surrounding environment. Induced growth, in contrast to the direct growth of employment, population, and housing resulting from a project, concerns the secondary or indirect growth associated with a proposed action. An action also may induce growth by lowering or removing barriers to growth or by creating amenities that attract new residents or increased economic activity.

Navy disposal and the No Action Alternative would not have any growth-inducing effects. Similarly, the Proposed Reuse Plan and the Reduced Development Alternative would not induce growth. It is assumed that increases in population, employment, and housing would occur in the surrounding region regardless of HPS reuse; HPS reuse provides a location for the growth but does not induce the growth. Growth inducement issues are addressed below for the Proposed Reuse Plan and Reduced Development Alternative at full build-out.

5.5.1 Net Addition

Development under the Proposed Reuse Plan and the Reduced Development Alternative would accommodate business activity, population, and housing growth at HPS. Whether that growth would represent a net addition to economic activity in the City or the region depends on location options for businesses and housing development elsewhere in the region. HPS development would contribute to increases in activity to the extent that it would provide a location for business expansion and/or residential development that otherwise would not exist in the City or the region. Shifts in economic activity from one location to another (e.g., corporate relocation to the suburbs) may have distributional and local effects (economic loss for San Francisco, gain for suburban communities) but do not affect the overall level of activity in the area of interest (e.g., the region). ABAG projections for the City (which provide the basis for growth assessments in Chapter 4) assume that HPS development would not substantially change the City's employment or population figures.

Net Addition of Business Activity and Employment

There would be business activity and employment growth at HPS and in the City under both the Proposed Reuse Plan and Reduced Development Alternative. There also would be a net employment gain for the City if the chosen alternative accommodates business activity and employment with no other location options in the City. Since some businesses that would locate at HPS would have other location options in the City, some of the employment growth associated with HPS reuse development would not represent a net addition to City-wide economic activity.

The Proposed Reuse Plan represents employment growth of about 6,400 jobs in the City by 2025, or about one percent of the City's jobs. The Reduced Development Alternative would create about 2,700 jobs. Businesses choosing to locate at HPS are likely to do so because of the potential lower costs compared to other nearby locations, such as business and industrial parks in the East Bay and South Bay, or because of unique amenities at HPS, such as waterfront views. Thus, HPS reuse is likely to affect business activity and employment

distribution in the region but not the total amount of business activity and employment.

Net Addition of Housing and Population

There would be more growth under the Proposed Reuse Plan and the Reduced Development Alternative than the No Action Alternative, since the latter results in no new housing development at HPS.

The Proposed Reuse Plan would contribute 1,800 more housing units in the City at full build-out. This increase would represent less than one percent of the City's housing stock. Under the Reduced Development Alternative, there would be only 700 more housing units added.

There are a variety of location options elsewhere in the region for residential development. Consequently, the choice between the Proposed Reuse Plan and the Reduced Development Alternative would affect housing and population growth distribution within the region, but not the amount of growth. As in the case of business development, it is likely that HPS would attract residents because of potential lower-cost housing options or because of residents' previous attachments to the local community.

5.5.2 Relationship Between Employment Growth and Population

Employment growth can induce population growth, thereby stimulating housing demand and demand for community facilities and infrastructure. The additional workers come from several sources: new residents to the area, people joining the labor force (returning to work or taking a job for the first time), and unemployed people finding jobs. The first source (new residents) represents the population growth induced by employment growth.

To compare the reuse alternatives from the perspective of population growth inducement, it is necessary first to estimate net additional employment growth associated with both the Proposed Reuse Plan and the Reduced Development Alternative. If employment growth is not dependent on HPS reuse, that is, if it would otherwise occur elsewhere in the City or region, then population growth associated with that employment growth cannot be solely attributed to HPS reuse.

As described above (Net Addition of Business Activity and Employment), jobs created by the Proposed Reuse Plan and the Reduced Development Alternative would represent one percent or less of the total regional employment. Employment in the Bay Area through full build-out in 2025 would be essentially the same under both alternatives. Therefore, employment growth under the Proposed

Reuse Plan and the Reduced Development Alternative would induce similar amounts of population growth.

The second growth-inducing consideration is location. There would not be a difference between reuse alternatives in employment growth locations throughout the region, since both the Proposed Reuse Plan and the Reduced Development Alternative would result in employment growth in the City. Both alternatives, however, are assumed to attract some jobs that would otherwise be located elsewhere in the region.

5.5.3 Multiplier Effects

Multiplier effects account for those economic interrelationships through which certain business types support other businesses, business activity supports household spending, and household spending generates sales and economic activity. Future economic activity at HPS under both the Proposed Reuse Plan and the Reduced Development Alternative would be related to economic activity elsewhere in the City and the region. Some HPS activity would have multiplier effects, supporting businesses outside HPS. HPS businesses would stimulate growth in other businesses elsewhere in the South Bayshore area and outside the City through supply, services, or equipment purchases. HPS development and related business activity would provide wages and salaries that support household spending for consumer goods and services.

Conversely, some economic growth at HPS would be supported by the multiplier effect of businesses outside HPS. For example, some South Bayshore businesses could become customers of businesses likely to locate at HPS. Thus, not all HPS commercial and industrial development would generate economic activity through multiplier effects. Some would accommodate multiplier activity generated from other locations. This scenario would occur under both the Proposed Reuse Plan and Reduced Development Alternative.

There would be differences in the magnitude of economic multiplier effects at HPS with each alternative. The Proposed Reuse Plan would have the greatest multiplier effect because it would provide the greatest amount of employment and housing, while the No Action Alternative would have none.

Retail activity in the City would be affected by HPS resident and worker spending due to the multiplier effect. HPS development would contribute to growth and change in the City's retail sector in two ways. First, HPS retail development would be supported by HPS residents and workers, bringing new stores and restaurants to the South Bayshore area. Second, retail spending outside HPS by HPS

residents and workers would support sales growth in stores, restaurants, and specialized shopping areas elsewhere in the City.

5.5.4 Spillover Effects in Nearby Areas

Spillover effects are the changes in economic activity in areas near HPS that would result from HPS development. Developing the Proposed Reuse Plan or the Reduced Development Alternative would upgrade land character and activity types at HPS and in the South Bayshore area. Over time, HPS development and associated infrastructure and public service improvements would help support economic activity in areas beyond HPS boundaries, such as the Third Street corridor.

The South Bayshore area is expected to change over time, in part by implementing planned projects, such as the Bayshore Corridor transit improvements. HPS development would affect the pace of that change. In terms of business activity and employment associated with the Proposed Reuse Plan and the Reduced Development Alternative, upgrading the type of space and type of activity at HPS would gradually increase the attractiveness of areas nearby (in the South Bayshore area), making them more desirable to a broad range of businesses. With the No Action Alternative, this type of spillover effect would not occur.

In terms of housing and population, upgrading HPS would have some spillover effect in nearby areas, such as the South Bayshore area. The new HPS residents under both the Proposed Reuse Plan and the Reduced Development Alternative would not represent a dramatic change in land use in that part of the City. However, the development could attract more people to residential areas in the nearby South Bayshore area than would otherwise locate there. In contrast, HPS housing could absorb some of the demand for housing in the San Francisco area that otherwise would result in housing increases elsewhere. Employment opportunities resulting from both the Proposed Reuse Plan and the Reduced Development Alternative would bring business activities closer to residential neighborhoods in the South Bayshore area. This could result in easier access to job opportunities for area residents. The spillover effects would be more evident in adjacent nearby areas, such as South Bayshore, than they would be in more distant areas.

5.6 ENVIRONMENTAL JUSTICE

On February 11, 1994, President Clinton issued the Executive Order on Federal Actions to Address Environmental Justice in Minority and Low-income Populations. This order requires that "each Federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs,

policies, and activities on minority populations and low-income populations" (Executive Order 12898, 59 Fed. Reg. 7629 [Section 1-101] [1994]). On April 21, 1995, the Secretary of Defense submitted a formal environmental justice strategy and implementation plan to the U.S. EPA (U.S. Department of Defense, 1995).

To comply with Executive Order 12898, this EIS/EIR included the following actions:

- Reviewing U.S. census demographic information (1990) to identify economic and racial groups in the area that might be adversely affected.
- Notifying identified low-income and minority groups about the public meetings and document review processes described in Chapter 1.

The South Bayshore planning area, commonly known as the Bayview-Hunters Point neighborhood, is a predominately minority neighborhood. About 90 percent of the South Bayshore planning area's population is of African American, Asian, or other nonwhite origin. Table 5.6-1 summarizes the race/ethnic composition of the South Bayshore planning area and San Francisco (based on 1990 census data).

**TABLE 5.6-1:
RACE/ETHNIC COMPOSITION OF THE SOUTH BAYSHORE
PLANNING AREA AND SAN FRANCISCO, 1990**

Racial Diversity	South Bayshore Planning Area	San Francisco
White	9%	47%
African American	61%	11%
Asian/Pacific Islander	22%	29%
Hispanic	8%	13%
Other	<1%	<1%

Source: City and County of San Francisco, Planning Department, 1997d.

The ethnic composition of the South Bayshore planning area population is distinctly different from the City's as a whole. As of July 1998, the Bayview-Hunters Point neighborhood remains the strongest African American community in the City, but the proportion of African Americans has decreased to an estimated 55 percent. The estimated Asian/Pacific Islander population has increased to approximately 26 percent and is the neighborhood's second largest ethnic group (Ness, 1998).

In 1990, almost a fourth of all families in the South Bayshore planning area lived below the poverty level, compared with only 9.7 percent of households City-wide. In 1990, median household income in the eight South Bayshore planning area census tracts ranged from \$15,089 to \$70,543. In six of eight South Bayshore planning area census tracts, the 1990 median household income was below the City-wide median household income of \$33,413.

The purpose of Executive Order 12898 is to avoid placing a disproportionately high share of the adverse environmental or economic effects resulting from Federal policies and actions on minority and low-income populations. Specific requirements of this order and of Navy policy include the following:

- Ensure opportunities for community input to the NEPA process.
- Ensure that the public, including minority and low-income communities, has access to public information related to human health issues, environmental planning, regulation and enforcement.
- Analyze human health, economic, and social effects of the Federal action on minority and low-income communities, when such analysis is required by NEPA.
- Ensure that mitigation measures outlined or analyzed in an EIS address significant and adverse environmental effects of proposed Federal actions on minority and low-income communities.
- Ensure that all programs or activities under its control that receive financial assistance and that affect human health or the environment do not directly or indirectly use criteria, methods, or practices that discriminate on the basis of race, color, or national origin.

The Navy has ensured opportunities for community input throughout both the NEPA and CERCLA processes for HPS. Copies of the Draft EIS/EIR and *Revised* Draft EIS/EIR were distributed to an extensive mailing list of agencies, organizations, and individuals thought to have an interest in the proposed action. An information repository has been established and is maintained at the San Francisco Public Library, Anna E. Waden Branch, 5075 Third Street, and at the San Francisco Main Library. The repository includes copies of all major documents pertaining to the environmental work at HPS.

Several of the Proposed Reuse Plan and redevelopment plan objectives are specific to environmental justice principles. An objective of the HPS redevelopment plan includes providing for the development of

mixed-income housing. With regard to this objective, the project-wide aggregate income-mix goal includes 15 percent housing for persons and families of low or moderate income. Criteria for determining eligibility for affordable housing were established by the Department of Housing and Urban Development (HUD) in combination with City-wide median income statistics. The Proposed Reuse Plan proposes to bring job training and placement programs to Bayview-Hunters Point residents for jobs tailored to businesses likely to develop in the South Bayshore planning area. These proposals include incentives for HPS businesses to hire locally for positions in such fields as printing/publishing, motion picture production, trucking and courier services, and wholesale activity.

Impacts to transportation, traffic, and circulation, air quality, noise, land use, visual resources and aesthetics, socioeconomic, hazardous materials and waste, geology and soils, water resources, utilities, public services, cultural resources, biological resources, and energy for each alternative are addressed in EIS/EIR Chapter 4. These analyses conclude that, with mitigation, there would be no significant adverse impacts, with the exception of traffic and air quality. As such, there would be no disproportionate, or other impact on a minority or low-income population, with the exception of traffic and air quality.

The transportation analysis demonstrated that cumulative development would have significant and unmitigable impacts on one local intersection and on regional freeway segments. As described in Sections 4.1 and 5.1, the Proposed Reuse Plan would contribute to cumulative and unmitigable traffic impacts at the Third Street and Cesar Chavez Street intersection. This intersection would operate at LOS F in year 2015 with the extension of the Third Street light rail line, because the light rail line would reduce one through traffic lane in each direction along portions of Third Street. HPS reuse would contribute only 19 percent to the overall traffic volumes projected at this intersection, which is at the far northern boundary of the South Bayshore planning area in census tract 609. According to 1990 census data, of the eight census tracts that make up the South Bayshore planning area, census tract 609 had the most diverse racial composition and the smallest proportion of African Americans (19 percent) and other minority groups (36 percent). Therefore, traffic congestion at this intersection would not have a disproportionately high and adverse effect on minority and low-income populations.

Traffic associated with HPS reuse would contribute to cumulatively significant increased traffic congestion along U.S. 101 at the county line and along I-280 south of U.S. 101. However, U.S. 101 is an interstate transportation corridor traveling through California, and I-280 is a regional connector from San Jose to San Francisco. U.S. 101

and I-280 are bordered by many diverse communities with varied populations and income levels. Because of the regional character of these transportation facilities, the range of communities that use these facilities, and the small contribution of traffic generated by HPS reuse to these corridors (see Appendix B, Cumulative Transportation Impact Analysis), regional traffic impacts would not disproportionately affect minority and low-income populations.

Implementing either reuse alternative would result in significant and unmitigable air quality impacts related to increased ozone and PM_{10} precursor emissions and cumulative toxic air contaminant emissions. However, increases in ozone precursor emissions would occur at a regional scale and would not have a disproportionately high and adverse effect on the South Bayshore neighborhood. For example, it typically takes three to six hours to generate significant ozone concentrations. Therefore, the locations most affected by those emissions will be elsewhere in the Bay Area. This reaction/movement is why ozone concentrations, in fact, show broad, regional concentration patterns rather than localized hot spots. PM_{10} emissions would be generated by vehicles, many of which follow regional commute patterns, and therefore these emissions also would not have a disproportionately high effect on the HPS neighborhood. Similarly, significant and unmitigable toxic air contaminant emissions would be the result of mobile source emissions from increased traffic and cumulative emission sources. These sources would be distributed regionally and therefore would not have a disproportionately high and adverse effect on visitors, workers, or residents at HPS.

Human health issues also are addressed under the IRP process. Residents in the South Bayshore planning area would not be subject to disproportionately high adverse effects from the remedial actions. According to Department of Defense (DOD) policy, the Navy is directed to remediate HPS to a level commensurate with the local reuse plan. The remediation levels proposed for each HPS parcel are based on future potential land uses and are intended to protect human health (either for workers or residents, depending on the parcel), based on the human exposures actually likely to occur within the specific land use. Navy remedial actions and future City redevelopment activity will continue to be strictly regulated by restrictions in Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Records of Decision (RODs), worker safety regulations, and possibly deed restrictions, to ensure that workers and the general public are protected (see EIS/EIR Section 4.7).

As described in the cumulative impacts discussion above, some members of the community have suggested that residents of Bayview-

Hunters Point who work at HPS under the reuse plan alternatives may be disproportionately exposed to health risks because of the likelihood that they are exposed to potential sources of environmental contamination in their residential neighborhoods. While this concern may inform discussions with the U.S. EPA regarding the IRP risk assessment process in general, it would be speculative to conclude that a significant environmental impact would result in this particular instance. Furthermore, increased awareness of hazardous materials issues in the Bayview-Hunters Point neighborhood is expected to result in a diminution of risk in that neighborhood, as projects such as removal and/or replacement of PG&E's Hunters Point Power Plant are implemented. Also, other potential responses to this community concern, such as limiting HPS employment, would not be consistent with the objectives of reuse.

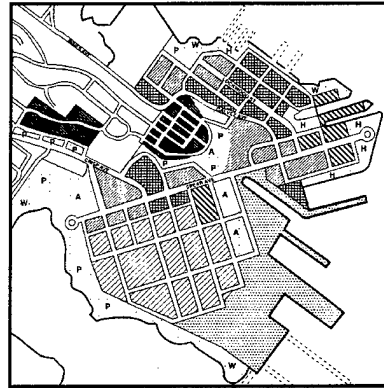
5.7 PROTECTION OF CHILDREN FROM ENVIRONMENTAL HEALTH AND SAFETY RISKS

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, states that each Federal agency must (1) make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and (2) ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks. Environmental health risks and safety risks mean risks to health or safety that are attributable to products or substances that the child is likely to come into contact with or ingest.

Pursuant to Executive Order 13045, the Navy has made it a high priority to identify and assess environmental health risks and safety risks that may have disproportionately high effects on children. There are no children presently residing at HPS, and there are no schools on HPS property. Therefore, Navy disposal and the No Action Alternative would not result in disproportionately high environmental health or safety risks to this population group. Under reuse, children could reside in Parcels A or B; both these parcels are being remediated, and there would be no disproportionately high adverse health risk to children (see Section 4.7, Hazardous Materials and Waste).

Compliance with the terms, conditions, and restrictions specified in the RODs, Finding of Suitability to Lease (FOSL), and Findings of Suitability to Transfer (FOSTs) for other parts of HPS would ensure that children living at the site and in the surrounding South Bayshore planning area, or visiting Parcels, C, D, E, or F, would not be disproportionately exposed to environmental health risks.

6 Consultation and Coordination



CHAPTER 6: CONSULTATION AND COORDINATION
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- Metropolitan Transportation Commission
- San Francisco Bay Conservation and Development Commission
- U.S. Environmental Protection Agency, Office of Federal Activities

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The project mailing list is used by the Navy and by the City of San Francisco to notify interested members of the public of the major milestones associated with the Reuse of Hunters Point. The agencies, organizations, and individuals on the mailing list for the November 1997 Draft EIS/EIR are presented in Appendix A. The agencies, organizations, and individuals on the updated distribution list for this *Revised* Draft EIS/EIR are presented in Chapter 9.

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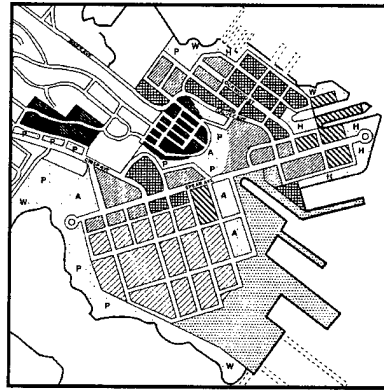
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7 References



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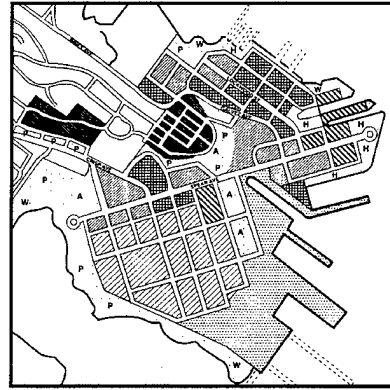
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8 Glossary



CHAPTER 8: GLOSSARY

8. GLOSSARY

§ 334 Early Transfer	A fee title transfer, with the concurrence of the U.S. EPA and the Governor of California, of unremediated parcels that may be developed and/or remediated by an entity other than the LRA or the Navy.
A-Weighted Sound Level (dBA)	A number representing the sound level that is frequency weighted according to a prescribed frequency response established by the American National Standards Institute (ANSI S1.4-1971) and accounts for the response of the human ear.
Air Installations Compatible Use Zones (AICUZ)	A Department of Defense (DOD) program designed to protect air installations and their flying missions from encroachment and interference from incompatible off-base activities and land uses. Land use recommendations for protecting off-base communities as well as bases are developed from aircraft noise and accident data along with general land use planning principles. These land use recommendations are provided to local governments, which are encouraged to implement the recommendations through local planning and land use control ordinances.
Ambient Air Quality Standards (AAQS)	Standards established on a state or Federal level that define the limits for airborne concentrations of designated "criteria" pollutants (nitrogen dioxide, sulfur dioxide, carbon monoxide, total suspended particulates, ozone and lead), to protect public health with an adequate margin of safety (primary standards) and to protect public welfare, including plant and animal life, visibility, and materials (secondary standards).
Attainment Area	A region that meets the National Ambient Air Quality Standards for a criteria pollutant under the Clean Air Act or meets state air quality standards.
Bay Area	Region loosely defined by San Francisco and San Pablo Bays and the geographic and urban areas along their shores.
Carbon Monoxide (CO)	A colorless, odorless, poisonous gas produced by incomplete fossil-fuel combustion. One of the six pollutants for which there is a national ambient standard.
Caretaker Status	The Navy is responsible for the upkeep and maintenance of the base until the environmental restoration program is completed and the property is transferred. Leasing arrangements would continue.
City, the	The City and County of San Francisco.

Class I, II, and III Areas	Area classifications, defined by the Clean Air Act, for which there are established limits on the annual amount of air pollution increase. Class I areas include international parks and certain national parks and wilderness areas; allowable increases in air pollution are very limited. Air pollution increases in Class II areas are less limited and are least limited in Class III areas. Areas not designated as Class I start out as Class II and may be reclassified up or down by the state, subject to federal requirements.
Community Noise Equivalent Level (CNEL)	Noise compatibility level established by 21 C.A.C. § 5000. The 24-hour average A-weighted sound level with a 5 dB weighting added to levels occurring between 10:00 p.m. and 7:00 a.m.
Comprehensive Environmental Response, Compensations, and Liability Act (CERCLA)	The Federal law (Pub. L. 96-510), passed December 11, 1980, which provides a series of programs to address the cleanup of hazardous waste disposal and spill sites. This program is codified in 42 U.S.C. § 9601 et seq.; and 26 U.S.C. § 4611, 4612, 4661, 4662, 4671, and 4672. It has been modified and amended several times, most significantly in 1986 by the Superfund Amendments and Reauthorizations Act (SARA).
Council on Environmental Quality (CEQ)	Established by the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) consists of three members appointed by the President. CEQ regulations (40 C.F.R. §§ 1500-1508, as of July 1, 1986) describe the process for implementing NEPA, including preparation of environmental assessments and environmental impact statements and the timing and extent of public participation.
Cultural Resources	Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or a community for scientific, traditional, religious, or any other reason.
Day-Night Average Sound Level (L_{dn})	The 24-hour average-energy sound level expressed in decibels, with a 10-decibel penalty added to sound levels between 10:00 p.m. and 7:00 a.m. to account for increased annoyance due to noise during night hours.
Decibel (dB)	A unit of measurement on a logarithmic scale that describes the magnitude of a particular quantity of sound pressure or power with respect to a standard reference value.
Effluent	Waste material discharged into the environment.
Equivalent Noise Levels (L_{eq})	Equivalent noise levels are used to develop single-value descriptions of average noise exposure over various periods of time.

Groundwater	Water within the earth that supplies wells and springs.
Groundwater Basin	Subsurface structure having the character of a basin with respect to collection, retention, and outflow of water.
Hazardous Material	Generally, a substance or mixture of substances that has the capability of either causing or significantly contributing to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness; or posing a substantial present or potential risk to human health or the environment.
Hazardous Waste	A waste, or combination of wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause or significantly contribute to, an increase in mortality or an increase in serious irreversible illness; or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of or otherwise managed. Regulated under the Resource Conservation and Recovery Act (RCRA).
Hectare (ha)	An area equivalent to 2.471 acres or 10,000 square meters.
Impact (effect)	An assessment of the meaning of changes in all attributes being studied for a given resource; an aggregation of all the adverse effects, usually measured using qualitative and nominally subjective technique. In this Environmental Impact Statement (EIS), as well as in the CEQ regulations, the word impact is used synonymously with the word effect.
Installation Restoration Program (IRP)	A program established by the Department of Defense to meet requirements of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and the Superfund Amendments and Reauthorization Act of 1986, which identifies, assesses, and cleans up or controls contamination from past hazardous waste disposal practices and hazardous material spills.
Lease in Furtherance of Conveyance (LIFOC)	A lease entered into after the Secretary of the Navy has complied with NEPA and has issued a final disposal decision for the property that provides immediate possession of the property to the entity identified in the disposal decision as the recipient of the property.
Mitigation	A method or action to reduce or eliminate program impacts.
National Ambient Air Quality Standards (NAAQS)	Nationwide standards for widespread air pollutants set by the U.S. EPA under section 109 of the Clean Air Act. Currently, six pollutants are regulated by primary and secondary NAAQS: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter (PM ₁₀), and sulfur dioxide.

National Environmental Policy Act (NEPA)	Public Law 91-190, passed by Congress in 1969. The Act established a national policy designed to encourage consideration of the influence of human activities (e.g., population growth, high-density urbanization, industrial development) on the natural environment. NEPA also established the Council on Environmental Quality (CEQ). NEPA procedures require that environmental information be made available to the public before decisions are made. Information contained in NEPA documents must focus on the relevant issues in order to facilitate the decision-making process.
National Register of Historic Places (NRHP)	A register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under authority of Section 2(b) of the Historic Sites Act of 1935 and Section 101(a)(1) of the National Historic Preservation Act of 1966, as amended.
Native Americans	Used in the collective sense to refer to individuals, bands, or tribes who trace their ancestry to indigenous populations of North America prior to Euro-American contact.
Nitrogen Dioxide (NO₂)	Gas formed primarily from atmospheric nitrogen and oxygen when combustion takes place at high temperature. NO ₂ emissions contribute to acid deposition ("acid rain") and formation of atmospheric ozone. One of the six pollutants for which there is a national ambient standard.
Nitrogen Oxide (NO_x)	Gases formed primarily by fuel combustion, which contribute to the formation of acid rain. Hydrocarbons and nitrogen oxides combine in the presence of sunlight to form ozone, a major constituent of smog.
Noise Attenuation	The reduction of a noise level from a source by such means as distance, ground effects, or shielding.
Noise Contour	A line connecting points of equal noise exposure on a map. Noise exposure is often expressed using the average day-night sound level, DNL.
Nonattainment Area	An area that has been designated by the U.S. EPA or the appropriate state air quality agency as exceeding one or more National or State Ambient Air Quality Standards.
Outlease	Contract by which the government transfers exclusive possession of real estate or facilities for a specified term.
Ozone (ground level)	A major ingredient of smog. Ozone is produced from reactions of hydrocarbons and nitrogen oxides in the presence of sunlight and heat. Some 68 areas, mostly metropolitan areas, did not meet a

	December 31, 1987 deadline in the Clean Air Act for attaining the ambient air quality standard for ozone.
Polychlorinated Biphenyl (PCB)	Any of a family of industrial compounds produced by chlorination of biphenyl. These compounds are noted chiefly as an environmental pollutant that accumulates in organisms and concentrates in the food chain with resultant pathogenic and teratogenic effects. They also decompose very slowly.
Prevention of Significant Deterioration (PSD)	In the 1977 Amendments to the Clean Air Act, Congress mandated that areas with air cleaner than required by National Ambient Air Quality Standards be protected from significant deterioration. The Clean Air Act's PSD program consists of two elements: requirements for Best Available Control Technology on major new or modified sources and compliance with an air quality increment system.
San Francisco	The City of San Francisco, non-government reference.
State Historic Preservation Officer (SHPO)	The official within each state, authorized by the state at the request of the Secretary of the Interior, to act as liaison for purposes of implementing the National Historic Preservation Act.
Sulfur Dioxide (SO₂)	A toxic gas that is produced when fossil fuels, such as coal and oil, are burned. SO ₂ is the main pollutant involved in the formation of acid rain. SO ₂ can irritate the upper respiratory tract and cause lung damage. During 1980, some 27 million tons of sulfur dioxide were emitted in the United States, according to the Office of Technology Assessment. The major source of SO ₂ in the United States is coal-burning electric utilities.
Total Daily Person Trips	The number of trips made by individual persons into and out of a designated area on a typical week day, usually measured Tuesday through Thursday.
Total Daily Vehicle Trips	The number of trips made by vehicles into and out of a designated area on a typical week day, usually measured Tuesday through Thursday.
Total Suspended Particulates (TSP)	The particulate matter in the ambient air. The previous national ambient air quality standard for particulates was based on TSP levels; it was replaced in 1987 by an ambient standard based on PM ₁₀ levels.
U.S. Environmental Protection Agency (U.S. EPA)	The independent federal agency, established in 1970, that regulates federal environmental matters and oversees the implementation of federal environmental laws.
Zoning	The division of a municipality (or country) into districts for purpose of regulating land use, types of building, required yards, necessary off-

street parking, and other prerequisites to development. Zones are generally shown on a map. The zoning ordinance specifies requirements for each zoning category.

Zoning Terms

Residential Districts

RH-1 allows residential housing at a density of one dwelling unit per lot while RH-2 allows two dwelling units per lot. RM-3 allows multiple unit residential housing at a maximum of one unit per 800 square feet of lot area. Permitted uses in the RM-3 district include group housing, boarding, and religious orders. Each of the residential zones allows other low intensity uses not in conflict with residential.

Commercial Districts

Neighborhood commercial zones are NC-1, NC-3, and NC-S and *commercial zones* are C-1, C-2 and C-M. NC-1 allows residential uses on all levels and retail establishments on the ground level. Most low intensity sales and service establishments are permitted along with residential dwelling units at a density of one unit for every 800 square feet of lot area. NC-3 allows residential uses at all levels and retail establishments on the first and second levels. Residential dwelling units are allowed at a density of one unit for every 600 square feet of lot area. NC-2 allows high intensity retail sales and service on the first and second levels. Residential dwelling units are allowed at a density of one unit for every 800 square feet of lot area.

C-1 (Neighborhood Shopping) is intended for the supplying of retail goods and personal services at convenient locations for the needs of nearby residents. The C-1 Districts are usually surrounded by residential land uses. C-2 (Community Business) is intended to provide convenience goods and comparison shopping goods and services on a general or specialized basis to a city-wide or a regional market area. Permitted uses include retail, offices, restaurants, and residential buildings. C-M allows certain heavy commercial uses not permitted in other commercial districts. The emphasis is upon wholesaling and business services, but some light manufacturing and processing are also permitted though often limited to less than an entire building. Permitted uses include wholesale, storage, repair, retail, offices, and service uses.

Industrial Districts

M-1 is a light industrial zone that allows smaller industries dependent upon truck transportation while the M-2 zone allows larger industries served by rail and water transportation and by large utility lines. The larger industries have fewer screening and enclosure requirements

than the smaller industries, but more stringent restrictions on use and location.

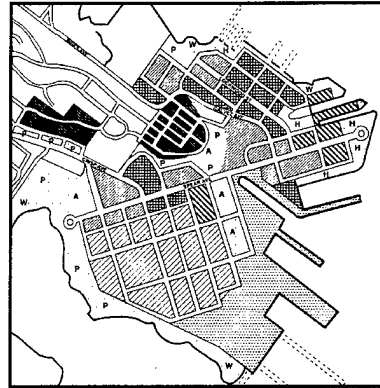
Public Use Districts

The P District zoning designation applies to land owned by a governmental agency that is in some form of public use, including open space.

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Chapter 9

Revised Draft EIS/EIR Distribution List



CHAPTER 9: REVISED DRAFT EIS/EIR DISTRIBUTION LIST

9. REVISED DRAFT EIS/EIR DISTRIBUTION LIST

The following individuals, agencies, and organizations have been sent a copy or have received a Notice of Completion/Notice of Availability of this *Revised* Draft Environmental Impact Statement/Environmental Impact Report (EIS/EIR).

Title	Last	First	Organization	Branch
Elected Officials				
			The Honorable Barbara Boxer The Honorable Dianne Feinstein The Honorable John Burton The Honorable Milton Marks The Honorable Nancy Pelosi The Honorable Quentin Kopp The Honorable Tom Lantos The Honorable Willie Brown	
Federal Agencies				
Commanding Officer	Sachs	Steven	Department of Housing and Urban Development	Community Planning and Development, 9ADE
	White	Wayne	Department of the Interior	Fish and Wildlife Service
	Reynolds	John J.	Department of the Interior	National Park Service
	Sanderson Port	Patricia	Department of the Interior	Office of the Secretary
	Cah	Dianne	Federal Aviation Administration	Office of Real Estate Sales
	Doszkocs	Tom	General Services Administration, Region 9	Property Disposal Division (9PR)
	Sullivan	Laurie	National Oceanic & Atmospheric Administration	c/o U.S. EPA Region 9 (H-1-2)
			U.S. Army Corps of Engineers	Sacramento District
			U.S. Coast Guard	Marine Safety Office, San Francisco Bay
	Bybee	Jim	U.S. Department of Commerce	National Marine Fisheries Service
Director	O'Brien	Pat	U.S. Department of Defense	Office of Economic Adjustment
	Ryett	Paul	U.S. Department of Defense	Office of Economic Adjustment
	Hoops	George	U.S. Department of Education	Federal Real Property Assistance Program
	Hakola	David	U.S. Department of Education	Real Property Group
Chief	Deason	Dr. Jon	U.S. Department of the Interior	Bureau of Indian Affairs
			U.S. Department of the Interior	Office of Environmental Policy and Compliance
	Harris	Dan	U.S. Department of Transportation	Federal Highway Administration
			U.S. EPA	Office of Federal Activities
	Farrell	David J.	U.S. EPA Region 9	Office of Federal Activities
	Moyer	Bob	U.S. EPA Region 9	Office of Regional Counsel

Title	Last	First	Organization	Branch
	Trombadore	Claire	U.S. EPA Region 9	
	Haas	James	U.S. Fish & Wildlife Service	Division of Ecological Services
Navy				
Commander	Gustafson	Jim	Caretaker Site Office Commander-in-Chief Pacific Fleet COMNAVBASE, San Diego Defense Technical Information Center	(CINPACFLT) (Code N44) Code N45, Environmental Programs DTIC-BLS
State Agencies				
District Director	Delaplaine	Mark	California Air Resources Board	
	Michael	Martin	California Coastal Commission, Land Use	
			California Department of Fish and Game	CERCLA/NRDA Unit
			California Department of Fish and Game	Region 3, Coastal Region
	Todd	Bob	California Department of Parks and Recreation	
	Yahata	Harry	California Department of Transportation	District 4
	Curtiss	Kit	California Department of Transportation	Office of Transportation Planning
			California Department of Water Resources	
	Heusinkveld	Valerie	California EPA	Department of Toxic Substances Control
	Moskat	Gunther W.	California EPA	Department of Toxic Substances Control
Public Lands Manager	Jordan	Leigh	California Historical Resources Information Systems	Northwest Information Center
	Rivasplata	Antero A.	California Office of Planning and Research	State Clearinghouse
	Nevins	Terri	California State Coastal Conservancy	
	Plummer,	Dave	California State Lands Commission	
	Widell	Cherilyn	California State Office of Historic Preservation	
Regional Agencies				
	Wheeler	Douglas	The Resources Agency	
	Ryder	Suzan	Association of Bay Area Governments	
	Fortney	Cathrine	Bay Area Air Quality Management District	

Title	Last	First	Organization	Branch
	Brittle	Chris	Metropolitan Transportation Commission	Metro Center
Local Agencies				
General Manager	Klein	Lawrence	Bureau of Energy Conservation	Hetch Hetchy Water & Power
	Turner	Zan	City and County of San Francisco	Department of Building Inspection
	Anatore	Dennis A.	City and County of San Francisco	Planning Commission
Secretary	Avery	Linda	City and County of San Francisco	Planning Commission
President	Chinchilla	Hector	City and County of San Francisco	Planning Commission
	Hills	Richard	City and County of San Francisco	Planning Commission
	Joe	Cynthia	City and County of San Francisco	Planning Commission
	Martin	Lawrence B.	City and County of San Francisco	Planning Commission
	Mills	Beverly	City and County of San Francisco	Planning Commission
Vice President	Theoharis	Anita	City and County of San Francisco	Planning Commission
	Robinson	Joel	City and County of San Francisco	Recreation and Park Department
	Reidy	Daniel F.	Landmarks Preservation Advisory Board	
	Kilstrom	Keri	Port of San Francisco	
	Cooper	John	San Francisco City Attorney's Office	
	Brownell	Amy	San Francisco Department of Public Health	Bureau of Toxics
Manager	Lee	Tommy	San Francisco Department of Public Works	Bureau of Environmental Regulation and Management
	McDowell	Willie	San Francisco Department of Public Works	
	Bennett	Rod	San Francisco Fire Department	
	Whittle	Deborah	San Francisco Housing Authority	
Transit Planner	Lowe	James	San Francisco Municipal Railway	
Captain	Holder	Richard	San Francisco Police Department	
General Manager	Moran	Anson	San Francisco Public Utilities Commission	
			San Francisco Redevelopment Agency	SFRA Commissioners
	Conrad	Tom	San Francisco Redevelopment Agency	
Director	deVaughn	Marcia	San Francisco Solid Waste Management	
General Manager	Mullane	John	San Francisco Water Department	
Individuals				
Ms.	Aguirre	Ena		
Mr.	Allan	Peter		
Ms.	Arlington	Ethel		

Title	Last	First	Organization	Branch
Mr.	Autry	James		
Mr.	Banks	Jesse		
Ms.	Bauer	Lisa		
Mr.	Beck	Albert		
Mr.	Bell McDowell	Willie		
Mr.	Burgess	Ollie		
Ms.	Choy Ong	Cynthia		
Mr.	Cincotta	David		
Ms.	Daniels	Michelle		
Ms.	Ellis	Janet		
Ms.	Fox	Jill		
Ms.	Frazier	Rochelle		
Ms.	Gaudain	Silk		
Mr.	Harris	Michael		
Ms.	Hayes	Ellen		
Ms.	Henry-Ellis	Michelle		
Ms.	Hines	Toni		
Ms.	Huggins	Karen		
Mr.	Jackson	David E.		
Ms.	James	Wedrell		
Mr.	Jones	Alvin		
Ms.	Jones	Joyce		
Mr.	King	Leroy		c/o ILWU
Mr.	LaMell	Anthony		
Ms.	Lewis	Kathy		
Mr.	Mackin	Edward		
Mr.	Madison	Scott		
Mr.	Mansbach	Larry		
Ms.	Maxwell	Sophenia		
Ms.	McCoy	Ilean		
Ms.	McDaniels	Carolyn		
Mr.	Miller	Cliff		
Ms.	Mousseaux (McLeod)	Jenny		
Mr.	O'Neill	Francis J.		
Ms.	Oertel	Diana		
Mr.	O'Neill	Frank		
Ms.	Papazian	Hali		
Mr.	Phillips	James		
Ms.	Pierce	Karen		
Mr.	Ramirez	Alex		
Ms.	Richardson	Linda		
Mr.	Sanger, Esq.	John		
Ms.	Sims	Willa		
Mr.	Stern	Clarence		
Ms.	Suet Barkley,	Alice		

Title	Last	First	Organization	Branch
Mr.	Esq. Thibeaux, Jr.	Leon		
Ms.	Tui	Manuma		
Mr.	Umble	David		
Mr.	Ventresca	Joel		
Ms.	Vincent	Dorris M.		
Ms.	Washington	Caroline		
Mr.	Weicker	Steven		
Mr.	White	Bruce		
Ms.	White	Gwenda		
Mr.	White III	Nathaniel		
Ms.	Willette	Eunice		
Mr.	Williams	Jessie		
Ms.	Yamauchi	Lori		
Organizations				
Mr.	Walker	Charlie	African American Truckers Association	
Chairperson	Jacobuitz	Bob	AIA San Francisco Chapter	
	Norman	Alvin	Al Norman Plumbing	
	Zwierlein	Irene	Amah Tribal Band	
	Bloom	Saul	ARC Ecology	
	Mayer	Richard	Artists Equity Association	
	Hestor	Sue	Attorney at Law	
	Feinstein	Arthur	Audubon Society	Golden Gate Chapter
	Kirwan	John	Averbeck Environmental	
			B. Wilson & Associates	
	Taylor	Nancy	Baker & McKenzie	
			Bay Area Council	
	Herz	Michael	Baykeeper Society	
	Stark	Rebecca	Bayview-Hunters Point Crime Prevention Council	
	Sowells	Darlene J.	Bayview-Hunters Point Ecumenical Council	
	Gross	Shirley	Bayview-Hunters Point Foundation	Administration Offices
	Jackson	Espanola	Bayview Coordinating Council	
	House	Ralph	Bayview Hill Neighborhood Association	
	Pierce	Karen	Bayview Hunters Point Democratic Club	
	McCoy	Harold	Bayview Merchants Association	
	Westbrook	Gwendolyn	Black Leadership	
	Dyett	Michael	Blayney-Dyett	
			BP Builders Exchange	
	Young	Frank	Breitman Co.	
	Daimond	Susan R.	Brobeck, Pheleger, Harrison	

Title	Last	First	Organization	Branch
Executive Director	Madison	Scott	Businesses of Hunters Point Shipyard	
	Davis	George W.	BVHP Multipurpose Sr. Services, Inc.	
	Togia	Lorraine	BVHP Multipurpose Sr. Services, Inc.	
Chair	Robinson	Alma	CA Lawyers for the Arts	Yerba Buena Chapter UCSF
	Williams	Alfred	CAC Consultant	
	Jones	Shirley	Caheed Child Care Center	
	Cahill	Jay	Cahill Contractors, Inc.	
			California Environmental Trust	
	Sigg	Jake	California Native Plant Society	
	Rhine	Bob	Capital Planning Department	
	Dale LeWinter	Marcia	CDA Export Network	
	Lester	Carol	Chicago Title	
	Soule	Ken	Chickering & Gregory	
			Chinatown Resource Center	
	Marmer	Jeff	Coalition for Better Wastewater Solutions	
	Murphy	Dorice	Coalition For San Francisco Neighborhoods	
	Beeras	James	Coalition on Homelessness	
	Purcell	Dennis	Coblentz, Cahen, McCabe and Breyer	
	Gendel	Neil	Consumer Action	
	Welch	Calvin	Council of Community Housing Organizations	
	Farrell	Lawrence	Cushman Wakefield of California, Inc.	Bank of America Center
	Stiefvater	Wayne	Cushman Wakefield of California, Inc.	Bank of America Center
Reverend	Hawkins	Cordell	David Rhoades & Associates	
			Double Rock Church	
			Downtown Association	
			EIP Associates	
State Coordinator			Environmental Science Associates, Inc.	Historic Preservation Consultants
	Stevens	Doug	Farella, Braun & Martel	
			Food and Fuel Retailers For Economic Equality	
	Platt	Mrs. Bland	G. Bland Platt Associates	
	Gordon Vettel	Peter Steven L.	Gensler and Associates	
			Gladstone & Vettel, Attorney at Law	
	Eng	Anne Lee	Golden Gate University	Environmental Law and Justice Clinic

Title	Last	First	Organization	Branch
Chairperson	Crow	Paula	Goldfarb & Lipman	
	LeStrange	Eric	Greenwood Press, Inc.	
	Freund	Frederic	Gruen, Gruen & Associates	
	Smith	Reuben	Hanford Freund & Co.	
			Hastings College of Law - Library	
			Hunters Point Boys and Girls Club	
			Hunters Point Community Youth Park	
	Viera	Julia	Hunters Point Homeowners Association	
	Middleton	Julia	Hunters Point Recreation Center	
	Hardin	Heidi	Hunters Point Shipyard Artists Association	
Executive Director	Hope	Linda	Hunters Point Shipyard Artists Association	ARTS Democratic Club Northwestern University Bayview Hunters Point
	Sayer	Ann Marie	Indian Canyon Mutsun Band of Costanoan	
	Logan	Gaylon	Infusion One	
	Fox	Jill	Innes Avenue Coalition,	
	Friesema	H. Paul	Institute for Policy Research	
	Edwards	Vida	Jackie Robinson Garden Apartments	
			Jon Twichell Associates	
	Hoffman	Elliot	Just Desserts	
	Vargo	Jan	Kaplan/McLaughlin/Diaz	
	Kern	Douglas	Kern Mediation Group	
Chairperson	Bertone	Don	Little Hollywood Improvement Association	
			Mariners Village Homeowners Association	
	Maxwell	Sally	Maxwell & Associates	
			McKinnon Avenue Community Club	
	Tone	Jerry	Montgomery Capital Corporation	
	Reid	Douglas	Moran Heights Homeowners Association	
	Herber	Jacob	Morrison & Foerster	
	Hersey	Valerie	Munsell Brown	
	Cambra	Rosemary	Muwekma Indian Tribe	
	Sneed	Regina	National Lawyers Guild	
			Natural Resources Defense Council	
	Murray	Samuel A.	New Bayview Committee	
	Govender	Manjala	New HP Homeowners Assoc.	
	Nichols	Louise	Nichols-Berman	

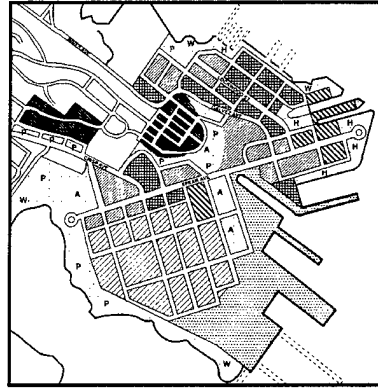
Title	Last	First	Organization	Branch
Father	Galvan	Andrew	Ohlone Group	
	Kehl	Jakki	Ohlone Group	
	Marquis	Kenneth	Ohlone Group	
	Orozco	Patrick	Ohlone Group	
	Rodriguez	Ella Mae	Ohlone Group	
	Yamane	Linda G.	Ohlone Group	
	Ullcry	Kirk	Our Lady of Lourdes	
	Hardee	Will	Pacific Gas & Electric Company	
			Page & Turnbull	
	Zeller	Marie	Patri-Burhage-Merken	
			Perini Corporation	
	Siems	Marilyn L.	Pilsbury, Madison & Sutro	
	Root	Gloria	Planning Analysis & Development	
	Gray	Tony	Precision Transport	
	McCoy	Yvette	Progress Seven	
	Jones	Rev. Calvin	Providence Baptist Church	
	Bass	Peter	Ramsay/Bass Interest	
	Law	Sally Ann	RAND	
	Holmes	Marc	Restoring the Bay Campaign	
	Reuben	James	Reuben, and Alter	
Executive Director	Lembcke, FAIA	Herb	Rockerfeller & Associates Realty L.P.	
	Foster	Thomas N.	Rothschild & Associates	
	Livermore	Richard	Royal Lepage Commercial Real Estate Services	
	Caplan	Leslie	San Francisco Baykeeper	
	Casey	Donna	San Francisco Beautiful	
	Smith	Stanley	San Francisco Building & Construction Trades Council	
	Lee	Sue	San Francisco Chamber of Commerce	
	Christensen	Pat	San Francisco Council of District Merchants	
	Brittan	Georgia	San Francisco for Reasonable Growth	
	Allman	Richard	San Francisco Housing & Tenants Council	
	Johnson	Walter	San Francisco Labor Council	
	Lucas	Lorraine	San Francisco League of Neighborhoods	
	Dutra	Louise	San Francisco Organizing Project	
	Chappel	James	San Francisco Planning and Urban Research Association	
	Frazier	Rochele	San Francisco Senior Escort Program	

Title	Last	First	Organization	Branch
Executive Director	Clary	Jennifer	San Francisco Tomorrow	San Francisco Bay Chapter San Francisco Group
	Kilroy	Toni	San Francisco Tomorrow	
	Morrison	Jane	San Francisco Tomorrow	
	Mix Jr.	George	San Francisco Urban League	
	Nakatani	Keith	Save San Francisco Bay Association	
			Sedway Cooke Associates	
	Washington	Osceola	Senior Citizen Bayview	
	Nuru	Mohammed	SF League of Urban Gardeners	
	Morishita	Leroy	SFSU Admin. Plan	
	Kremer	Dave	Shartsis Freise & Ginsburg	
	Billote	Bill	Shipyard Tenants Steering Committee	
	Wright	Patricia	Shoreview Resident Associate	
			Sierra Club	
			Sierra Club	
			Sierra Club	
	Kriken	John	Skidmore, Owings & Merrill	
	Alschuler	Karen	SMWM	
	Lewis	Olive	Solem & Associates	
Center Director	Pitcher	Alex	South Bayshore CDC	
	Browning	Sy-Allen	South East Economic Group (SEED)	
	Lantsberg	Alex	Southeast Alliance for Environmental Justice (SAEJ)	
	Wilson	Claude	Southeast Alliance for Environmental Justice (SAEJ)	
	Brown	Bernice	Southeast Community College	
	Garlington	Ethel	Southeast Community Facility	
	Palega	Sulu	Southeast Community Facility Commission	
	Selmar	Cynthia	Southeast Health Center	
			Square One Film & Video	
	Tandler	Robert S.	Steeffel, Levitt & Weiss	
Executive Director	Bardis	John	Sunset Action Committee	
			Sustainable San Francisco	
	Bahlman	David	The Foundation for San Francisco's Architectural Heritage	
			The Jefferson Company	
	Legallet	Robert	The Normandy Associates	
Ms.	Jones	Henrietta	Third Street Task Force	
	Lezama	Glen	Union Bank	
	Dominski	Tony	West Edge Design	
	Tatum	Carol S.	Youth Community Developers	

Title	Last	First	Organization	Branch
Libraries				
	Wingerson	Kate	Government Documents Government Publications Department San Francisco Public Library Stanford University Libraries UC Berkeley	San Francisco Main Public Library San Francisco State University Anna E. Waden Branch Johnson Library of Government Documents Institute of Government Studies
Newspapers				
	Ratcliff	Mary	Asian Week Associated Press Bay City News Service Bayview Newspaper Chinese News Service Chinese Times El Bohemio News International Daily News Korea Central Daily News Nichi Bei Times Philippine Examiner Today Potrero View Newspaper San Francisco Bay Guardian San Francisco Bay Times San Francisco Business Times San Francisco Chronicle, Press Office	
	King	John	San Francisco Examiner	
	Adams	Gerald	San Francisco Independent	
	Wilcox	Linda	San Francisco Weekly	
	Washington	Huel	The New Fillmore Newspaper The Sun Reporter The Tenderloin Times	

Appendix A

Public Participation



APPENDIX A: PUBLIC PARTICIPATION
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DEPARTMENT OF THE NAVY
ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO :

5090.1B

June 27, 1995

PUBLIC NOTICE

SUBJECT: NOTICE OF SCOPING OF PUBLIC CONCERNS REGARDING AN ENVIRONMENTAL IMPACT STATEMENT/ENVIRONMENTAL IMPACT REPORT FOR THE DISPOSAL AND REUSE OF THE FORMER NAVAL SHIPYARD HUNTERS POINT, SAN FRANCISCO, CALIFORNIA

The United States Department of the Navy in coordination with the City and County of San Francisco is preparing a joint Environmental Impact Statement (EIS)/Environmental Impact Report(EIR) on the disposal and proposed reuse of the former Naval Shipyard, Hunters Point property and structures located in San Francisco, California. The Defense Base Closure and Realignment Act (Public Law 101-510), as implemented by the 1993 base closure process, directs the U.S. Navy to close Naval Station Treasure Island and its off-station property, Hunters Point Annex (the former Naval Shipyard, Hunters Point). The EIS/EIR shall be prepared in accordance with Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and the California Environmental Quality Act (CEQA). The Navy shall be the EIS lead agency and the City of San Francisco shall be the EIR lead agency.

Federal, state, and local agencies, and interested individuals are encouraged to participate in the scoping process for the EIS/EIR to determine the range of issues and alternatives to be addressed. A public scoping hearing to receive oral and written comments regarding the proposed disposal and potential reuse of former Naval Shipyard, Hunters Point, will be held on Wednesday July 12, 1995 from 5:00 to 7:00 p.m. at the Southeast Community Facility, located at 1800 Oakdale Avenue, San Francisco, California.

The former Naval Shipyard is within the jurisdiction of the City of San Francisco, and covers approximately 500 acres of the southeast San Francisco waterfront. The property is developed for industrial ship repair facilities and associated buildings, including limited support facilities (residential, recreational). The EIS/EIR will address the disposal of the property and the potential impacts associated with potential reuses of the property.

The EIS/EIR will address the potential significant impacts to the environment that may result from implementation of two reuse alternatives (a preferred alternative and one other alternative) and a no-action alternative. The Hunters Point Shipyard Reuse Plan (based on a Hunters Point Land Use Draft Plan dated March 1995 and developed by the city and County of San Francisco Planning Department with the San Francisco Redevelopment Agency in conjunction with the Mayor's Citizens Advisory Committee) will constitute the preferred alternative. The preferred alternative has been endorsed by the San Francisco Planning and Redevelopment Commission and the Citizens Advisory Committee. The preferred reuse alternative would provide approximately 6,500 jobs, 1,300 residential units, 1.1 million square feet of industrial use (such as ship repair, ship maintenance, trucking and courier service, equipment leasing, printing and publishing, motion picture production, etc.); 300,000 square feet of research and development uses (such as data processing, telecommunications, etc.); 555,000 square feet of cultural/institutional use (such as large education and training facilities, museums, theaters, galleries, restaurants, etc.); 1.1 million square feet of mixed use (such as artist studios, live/work space, recording studios, research and development, hotel/conference facilities, retail, etc.); and 6.1 million square feet of open space. The

second alternative would be a reduced development of approximately 5,000 jobs, 600 residential units, 900,000 square feet of industrial use, 250,000 square feet of research and development use, 425,000 square feet of cultural/institutional use, 850,000 square feet of mixed use and 6.1 million square feet of open space. The "no action" alternative would have the former Naval Shipyard remain federal government property, in a continuing caretaker status.

In accordance with federal regulation implementing NEPA, the U.S. Navy takes this opportunity to invite the public to express, in writing, their comments and concerns regarding the above action. Affected federal, state, and local agencies and other interested parties are invited to submit written comments to:

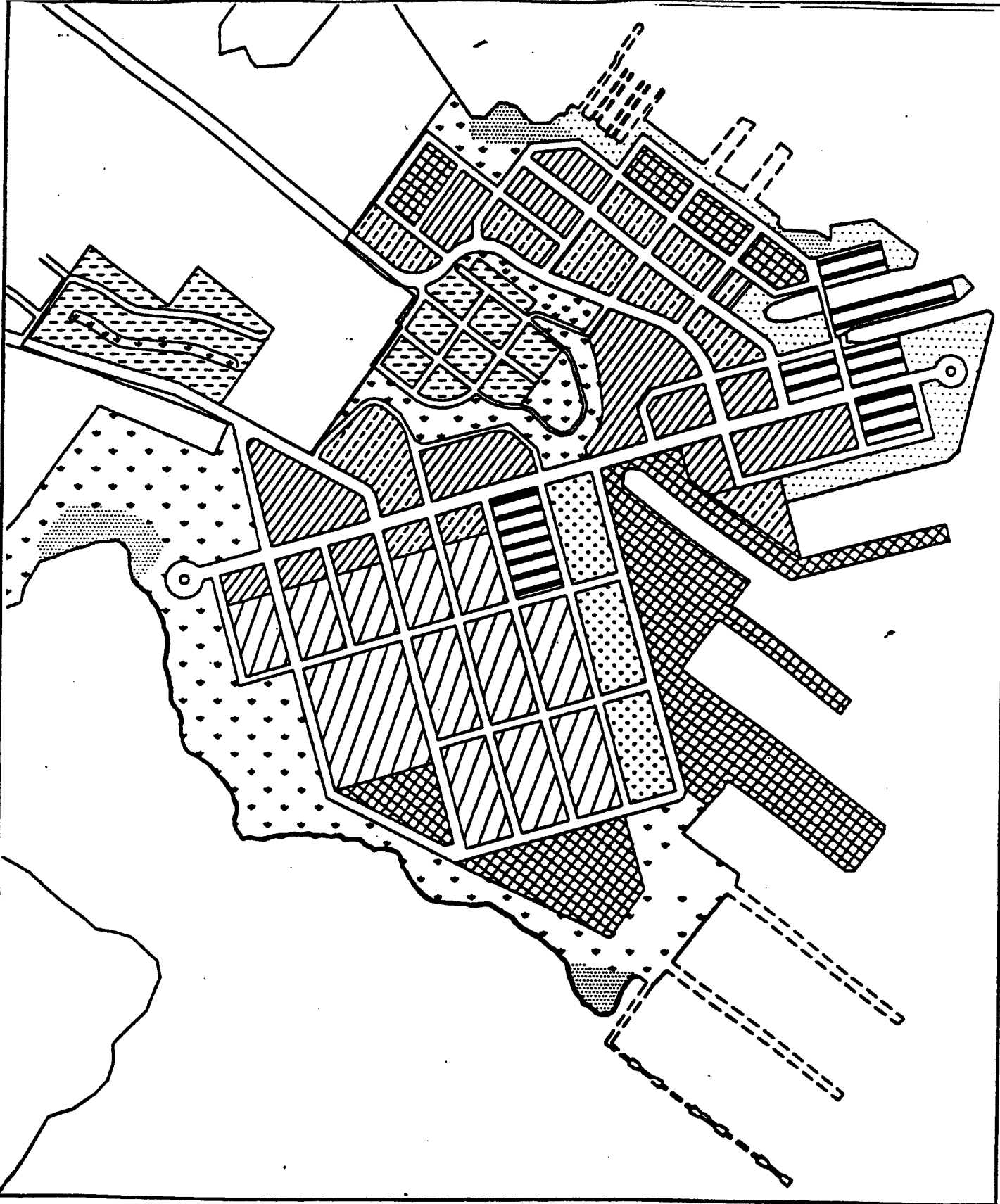
Ms. Mary Doyle (Code 185)
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Ms. Doyle's fax number is (415) 244-3737, and telephone is (415) 244-3024. Written comments must be received by July 30, 1995 to be considered in this scoping process.

For information concerning the EIR, please contact Ms. Barbara Sahn, of the San Francisco Planning Department, Office of Environmental Review, telephone (415) 558-6381. For information regarding the Hunters Point Shipyard Land Use Plan, please contact Mr. Byron Rhett, Hunters Point Shipyard Project Manager, San Francisco Redevelopment Agency, telephone (415) 749-2576, or Mr. Paul Lord, Hunters Point Shipyard Planning Manager, San Francisco Planning Department, telephone (415) 558-6311.


John H. Kennedy
Head, Environmental Planning Branch 6/27/95

Attachment



Hunters Point Shipyard

LAND USE DRAFT PLAN

HUNTERS POINT
SHIPYARD

Office of Military Base Conversion

Education/Cultural/
Historical

Industrial

Research & Development

Residential

Mixed Use
Retail/Gallery
Artist Studio
Artist Live/Work
Warehouse
Hotel/Conference

Future Development

Open Space

Passive

Active

Hard Surface

Possible Wetland
Restoration



=====

DEPARTMENT OF DEFENSE

Department of the Navy

Intent To Prepare an Environmental Impact Statement/Environmental
Impact Report for the Disposal and Reuse of the Former Naval Shipyard
Hunters Point, San Francisco, CA

Pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 as implemented by the Council on Environmental Quality regulations (40 CFR Parts 1500-1508) and the California Environmental Quality Act (CEQA), the Department of the Navy in coordination with the City and County of San Francisco is preparing a joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) for the disposal and potential reuse of the former Naval Shipyard, **Hunters Point** property and structures located in San Francisco, California. The Navy shall be the EIS lead agency and the City of San Francisco shall be the EIR lead agency. The Defense Base Closure and Realignment Act (Pub. L. 101-510) of 1990, as implemented by the 1993 base closure process, directed the U.S. Navy to close Naval Station Treasure Island and its off-station property, **Hunters Point Annex** (the former Naval Shipyard, **Hunters Point**). This EIS/EIR shall be prepared for the disposal and reuse of former Naval Shipyard **Hunters Point**. A separate EIS/EIR shall be prepared for the disposal and reuse of Naval Station, Treasure Island.

The former Naval Shipyard is within the jurisdiction of the City of San Francisco. It covers approximately 500 acres of the southeast San Francisco waterfront. The property is developed with industrial ship repair facilities and associated buildings, including limited support facilities (residential, recreational). The EIS/EIR will address disposal of the property and the potential impacts associated with potential reuses of the property.

The EIS/EIR will address the potential significant impacts to the environment that may result from the implementation of two reuse alternatives and a "no action" alternative. The **Hunters Point Shipyard Reuse Plan** (based on a **Hunters Point Land Use Draft Plan** dated March 1995 developed by the City and County of San Francisco Planning Department with the San Francisco Redevelopment Agency in conjunction with the Mayor's Citizens Advisory Committee) will constitute the preferred alternative. The preferred alternative has been endorsed by the San Francisco Planning & Redevelopment Commissions and the Citizens Advisory Committee. The preferred reuse alternative would provide approximately 6,500 jobs, 1,300 residential units, 1.1 million square feet of industrial use (such as ship repair, ship maintenance, trucking and courier services, equipment leasing, printing and publishing, motion picture production, etc.), 300,000 square feet of research & development use (such as data processing, telecommunication, etc.) 555,000 square feet of cultural/institutional use (such as large education and training facilities, museums, theaters, galleries, restaurants, etc.), 1.1 million square feet of mixed use (such as artist studios, live/work space, recording studios, research and development, hotel/conference facilities, retail, etc.), and 6.1 million square feet of open space. The second alternative would be a

reduced development of approximately 5,000 jobs, 600 residential units, 900,000 square feet of industrial use, 250,000 square feet of research & development use, 425,000 square feet of cultural/institutional use, 850,000 square feet of mixed use, and 6.1 million square feet of open space. The ``no action'' alternative would have the former Naval Shipyard remain federal government property, in a continuing caretaker status.

Federal, state, and local agencies, and interested individuals are encouraged to participate in the scoping process for the EIS/EIR to determine the range of issues and alternatives to be addressed. A public scoping meeting to receive oral [[Page 33393]] and written comments will be held at 5:00 p.m. on Wednesday, July 12, 1995, at the Southeast Community Facility, 1800 Oakdale Avenue, San Francisco, California. In the interest of available time, each speaker will be asked to limit oral comments to five (5) minutes. Longer comments should be summarized at the public meeting or mailed to the address listed at the end of this announcement. All written comments should be submitted within 30 days of the published date of this notice to Ms. Mary Doyle (Code 185), Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066-5006, telephone (415) 244-3024, fax (415) 244-3737. For information concerning the EIR, please contact Ms. Barbara Sahm, of the San Francisco Planning Department, Office of Environmental Review, telephone (514) 558-6381. For further information regarding the **Hunters Point** Shipyard Land Use Plan, please contact Mr. Byron Rhett, **Hunters Point** Project Manager of the San Francisco Redevelopment Agency, telephone (415) 749-2576 or Mr. Paul Lord, **Hunters Point** Planning Manager of the San Francisco Planning Department, telephone (415) 538-6311.

Dated: June 23, 1995.

L.R. McNees,
LCDR, JAGC, USN, Federal Register Liaison Officer.
[FR Doc. 95-15846 Filed 6-27-95; 8:45 am]
BILLING CODE 3810-FF-M



PLANNING DEPARTMENT

City and County of San Francisco 1660 Mission Street San Francisco, CA 94103-2414

(415) 558-6378

PLANNING COMMISSION
FAX: 558-6409

ADMINISTRATION
FAX: 558-6426

CURRENT PLANNING/ZONING
FAX: 558-6409

LONG RANGE PLANNING
FAX: 558-6426

NOTICE OF PREPARATION

To: Responsible and Trustee Agencies

From: City and County of San Francisco
Department of City Planning
Office of Environmental Review

Re: Notice of Preparation
Hunters Point Shipyard Base Reuse Plan

The City and County of San Francisco is working with the U.S. Navy, Engineering Field Activity West (EFA West), Naval Facilities Engineering Command, to prepare a joint Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) pursuant to State CEQA Guidelines § 15222 & 15226 for the following project:

94.061 Hunters Point Shipyard Base Reuse Plan.

The U.S. Navy has prepared a Notice of Intent for the EIS. A formal scoping meeting will be held on July 12 at 5:00 p.m. at the Southeast Community Center, 1800 Oakdale Avenue, San Francisco.

The project consists of alternative land use plans and development programs for the Hunters Point Shipyard. While Naval use of the shipyard ended in about 1974, the site remains under Navy jurisdiction. It was included in the second Base Realignment and Closure list (BRAC II) in 1991. A general description of the alternatives to be analyzed in the EIS is included in the attached Initial Study.

We need to know the views of your agency regarding the scope and content of the environmental information which is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the environmental document in decisionmaking related to the project.

The State CEQA Guidelines prescribe that responses must be submitted within 30 days of receipt of this notice. Please send responses to Barbara W. Sahn, Environmental Review Officer, at the letterhead address. Telephone inquiries should be directed to me at 415-558-6381. Copies of scoping letters directed to the U.S. Navy at EFA West are also welcome in response to this Notice of Preparation.

Barbara W. Sahn
Environmental Review Officer

June 28, 1995
date

U:\bwslwp51hpnop.695

**NOTICE THAT AN
ENVIRONMENTAL IMPACT REPORT
IS DETERMINED TO BE REQUIRED**

Date of this Notice: June 30, 1995

Lead Agency: City and County of San Francisco, Department of City Planning
1660 Mission Street, San Francisco, CA 94103

Agency Contact Person: Barbara W. Sahn

Telephone: (415) 558-6381

Project Title: 94.061E Hunters Point Shipyard Base Reuse Plan

Project Sponsor: U.S. Navy,
EFA West and City/County of
San Francisco

Project Contact Person: Paul Lord, San Francisco Planning Department

Project Address: Naval Shipyard, Hunters Point

City and County: San Francisco

Project Description: The proposed project is a Reuse Plan for the former Hunters Point Naval Shipyard, including educational, arts-related, cultural, retail, business services, industrial, maritime, residential and recreational/open space land uses. The project would require amendments to the San Francisco Master Plan to add an Area Plan, Preparation of zoning controls and amendments to the San Francisco Planning code, preparation of a Redevelopment Project Plan, and development controls and strategies. Approvals would be required from the San Francisco Planning Commission, the San Francisco Redevelopment Agency Commission, the San Francisco Board of Supervisors and the Mayor on the various planning documents and ordinances, and actions by the U.S. Navy and Department of Defense on disposition of the Naval Shipyard.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Section 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Deadline for Filing of an Appeal of this Determination to the City Planning Commission: July 19, 1995.

An appeal requires: 1) a letter specifying the grounds for the appeal, and;
2) a \$206.00 filing fee.


Barbara W. Sahn
Environmental Review Officer

INITIAL STUDY

94.061E HUNTERS POINT SHIPYARD BASE REUSE PLAN

Introduction

The City and County of San Francisco is working with the U.S. Navy, Engineering Field Activity West (EFA West) to prepare a joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) on the base closure and reuse plan for the Hunters Point Naval Shipyard. The reuse plan is being prepared by the San Francisco Planning Department working with the San Francisco Office of Military Base Conversion, the San Francisco Redevelopment Agency and a Citizen's Advisory Committee. The U.S. Navy has published a Notice of Intent to prepare an EIS/EIR. A formal scoping meeting for the EIS will be held on July 12, 1995. This Initial Study provides early notice that the City intends to cooperate with the Navy in preparing the joint EIS/EIR pursuant to CEQA §§ 15222 and 15226, a description of the Reuse Plan and alternatives to be analyzed, and a brief summary of the topics to be addressed in the EIS/EIR.

Project Description

In June, 1994, the Mayor's Citizen's Advisory Committee, working with the San Francisco Office of Military Base Conversion, selected as the preferred alternative reuse plan the "Education and Arts Alternative Plan" for the Hunters Point Naval Shipyard for further study. This alternative was selected from a group of four widely varying preliminary alternatives that emphasized maritime, industrial, arts/education or residential uses. The Education and Arts alternative has been refined by San Francisco Planning Department staff and consultants, working with the San Francisco Redevelopment Agency. "The Hunters Point Draft Land Use Plan" was published in March, 1995 and was endorsed by the Planning and Redevelopment Agency Commissions, the Board of Supervisors and the Mayor's Citizens Advisory Committee. The Environmental Impact Statement/Environmental Impact Report to be prepared on Hunters Point Shipyard Base Closure and Reuse will analyze this preferred alternative along with the "No Action" alternative and a reduced development alternative.

The Education and Arts Plan emphasizes the existing artist community at the Shipyard in defining the Shipyard's new image. At the same time, the location of new educational uses such as job training centers, public schools and conference facilities, serving all ages would help give the Education and Arts Alternative its identity. The existing artist community would be expanded. The artists, their studios, live-work spaces, galleries and exhibition spaces would form a mixed use neighborhood of commercial and industrial scale buildings and could include related warehousing and retail uses. Growth industry jobs, intended to enhance the Shipyard's role in the Bay Area's economic recovery, are expected to be encouraged in research/development and industrial areas included in the proposed plan.

There are a number of buildings of architectural and historical interest on the base. These buildings could be rehabilitated to become the focus of a special cultural and historic zone with space for museums dedicated to showcasing the history of the Shipyard and the contributions of

African-Americans, Native-Americans, and other local communities. Other maritime facilities on the base would remain in maritime use.

Residential use is proposed for the hilltop adjacent to an existing Bayview Hunters Point residential area. Over 100 acres of open space is proposed throughout the Plan area, in varying locations. The remainder of the Shipyard (about 100 acres) is left undesignated, for future development.

The EIS/EIR will analyze likely development at the Shipyard in two phases, based on analyses of market demand and absorption of the various proposed uses: development and related employment estimated to be likely by the year 2010, and a "buildout" of the Reuse Plan in the year 2025. The amount of space and employment to be analyzed in both phases is based on market analyses rather than on developable area. The "buildout" phase retains considerable amounts of land for future development; assessment of the types and amounts of use likely beyond the year 2025 would be too speculative to be informative.

Estimates of space and employment to be analyzed in the analysis years for the Reuse Plan are shown in the table on the following page. A map showing general locations of the proposed land uses at the Shipyard follows on page 4.

A reduced development alternative will be analyzed in the EIS/EIR that includes fewer square feet of all uses proposed in the Reuse Plan, with proportionally less employment, and that includes 600 dwelling units instead of the 1300 in the Reuse Plan alternative. Estimates of space and employment for this reduced development alternatives are also included in the enclosed table.

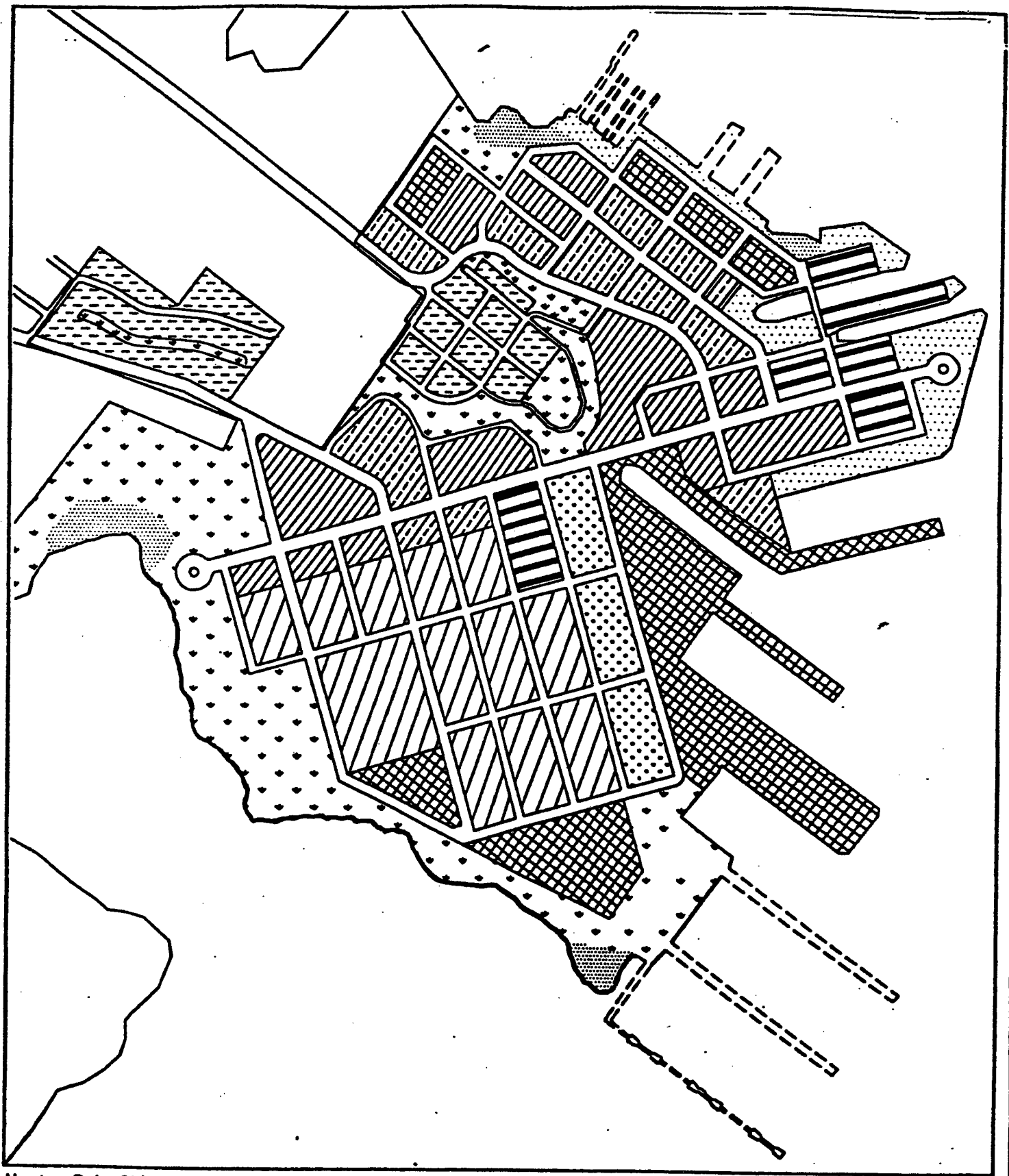
The "No Action" alternative would have the former Naval Shipyard property remain in continuing caretaker status under the federal government. No new uses will be analyzed for this alternative.

Summary of Potential Environmental Effects

The Hunters Point Shipyard, in use by the U.S. Navy until about 1974 and then used for ship repair by Triple A until the mid-1980's, is now primarily unused except for a few buildings used by the Navy for warehousing and temporary leases of a few buildings by the Navy to artists and some small businesses. The Navy recently contracted with Astoria Metals Corporation to use Drydock 4 (the largest on the West Coast) for ship breaking activities.

The site is a peninsula extending into San Francisco Bay from the eastern portion of the hill that was the original Hunters Point; about 1/2 to 2/3 of the land area is comprised of filled land. The Naval Shipyard is about 500 acres, with about 150 buildings, 6 dry docks and about 16,000 linear feet of berthing area. Several years of investigation have shown that there is hazardous waste in much of the soil and groundwater. The area was declared a "superfund" site in 1986-87 and the Navy has been carrying out remedial investigation and cleanup operations since the late 1980's.

Detailed studies of the existing conditions on the site have been prepared by the Department of City Planning in its "Existing Conditions Report" and by Navy staff at EFA West in the "Baseline Environmental Report". Copies of both are available for review at the Department of City



Hunters Point Shipyard

DRAFT LAND USE PLAN

**HUNTERS POINT
SHIPYARD**

Office of Military Base Conversion

 Education/Cultural/
Historical

 Industrial

 Research & Development

 Residential

 Mixed Use
Retail/Gallery
Artist Studio
Artist Live/Work
Warehouse
Hotel/Conference

 Future Development

Open Space

 Passive

 Active

 Hard Surface

 Possible Wetland
Restoration



Planning offices. These reports will be used to prepare the Affected Environment section of the EIS/EIR.

The Hunters Point Shipyard and some nearby areas have been designated as a Redevelopment Survey Area by the San Francisco Redevelopment Agency Commission and the San Francisco Board of Supervisors. The project to be analyzed in the EIS/EIR is a Reuse Plan covering the Hunters Point Shipyard portion of this survey area; the EIS/EIR is expected to provide background information for adoption of amendments to the San Francisco Master Plan and a Redevelopment Plan; therefore the document will be prepared at a plan level of detail.

Based on the Initial Study Checklist (attached) and on consultation with EFA West staff, potential effects on the following environmental features and issues will be considered in the EIS/EIR:

- land use/zoning
- socioeconomic issues, including population and growth inducement
- water quality and hydrology
- visual quality and urban design
- transportation
- noise
- air quality and climate
- biological resources
- geology, including issues related to seismic activity
- hazards, including soil and groundwater contamination and ongoing cleanup activities
- archaeological and historic resources
- public services and utilities
- energy

Construction related or temporary effects also will be generally described when possible

Note that because the document to be produced will be a joint EIS/EIR prepared pursuant to NEPA as well as CEQA, socioeconomic issues will be included despite the fact that this topic is not necessary to an EIR prepared only under the requirements of CEQA. The EIS/EIR will include CEQA-required growth inducing analyses as well as separately-identified mitigation measures where appropriate.

HPII.S. 12/13/94

ENVIRONMENTAL EVALUATION CHECKLIST
(Initial Study)

File No: 94.061E Title: Hunters Point Shipyard Reuse Plan
 Street Address: N/A Assessor's Block/Lot: 4891 A
 Initial Study Prepared by: Barbara W. Salm

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS

**Not
Applicable** **To Be
Discussed
in EIS/EIR**

- 1) Discuss any variances, special authorizations, or changes proposed to the City Planning Code or Zoning Map, if applicable. — X
- *2) Discuss any conflicts with any adopted environmental plans and goals of the City or Region, if applicable. — X

B. ENVIRONMENTAL EFFECTS - Could the project:

YES **NO** **TO BE
DISCUSSED
in EIS/EIR**

1) Land Use

- *(a) Disrupt or divide the physical arrangement of an established community? — X —
- *(b) Have any substantial impact upon the existing character of the vicinity? X — X

2) Visual Quality

- *(a) Have a substantial, demonstrable negative aesthetic effect? — X X
- (b) Substantially degrade or obstruct any scenic view or vista now observed from public areas? — X X
- (c) Generate obtrusive light or glare substantially impacting other properties? — X X

3) Population

- *(a) Induce substantial growth or concentration of population? X — X
- *(b) Displace a large number of people (involving either housing or employment)? — X —
- (c) Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply? X — X

4) Transportation/Circulation

- *(a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system? X — X
- (b) Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards? X — X

* Derived from State EIR Guidelines, Appendix G, normally significant effect.

	YES	NO	To Be DISCUSSED in EIS/EIR
(c) Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	<u>X</u>	<u>—</u>	<u>X</u>
(d) Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	<u>—</u>	<u>X</u>	<u>X</u>
5) <u>Noise</u>			
* (a) Increase substantially the ambient noise levels for adjoining areas?	<u>X</u>	<u>—</u>	<u>X</u>
(b) Violate Title 24 Noise Insulation Standards, if applicable?	<u>—</u>	<u>X</u>	<u>—</u>
(c) Be substantially impacted by existing noise levels?	<u>—</u>	<u>X</u>	<u>X</u>
6) <u>Air Quality/Climate</u>			
* (a) Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	<u>X</u>	<u>—</u>	<u>X</u>
* (b) Expose sensitive receptors to substantial pollutant concentrations?	<u>X</u>	<u>—</u>	<u>X</u>
(c) Permeate its vicinity with objectionable odors?	<u>—</u>	<u>X</u>	<u>X</u>
(d) Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	<u>—</u>	<u>X</u>	<u>X</u>
7) <u>Utilities/Public Services</u>			
* (a) Breach published national, state or local standards relating to solid waste or litter control?	<u>—</u>	<u>X</u>	<u>X</u>
* (b) Extend a sewer trunk line with capacity to serve new development?	<u>X</u>	<u>—</u>	<u>X</u>
(c) Substantially increase demand for schools, recreation or other public facilities?	<u>X</u>	<u>—</u>	<u>X</u>
(d) Require major expansion of power, water, or communications facilities?	<u>—</u>	<u>X</u>	<u>X</u>
8) <u>Biology</u>			
* (a) Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	<u>—</u>	<u>X</u>	<u>X</u>
* (b) Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	<u>—</u>	<u>X</u>	<u>X</u>
(c) Require removal of substantial numbers of mature, scenic trees?	<u>—</u>	<u>X</u>	<u>—</u>
9) <u>Geology/Topography</u>			
* (a) Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction).	<u>X</u>	<u>—</u>	<u>X</u>
(b) Change substantially the topography or any unique geologic or physical features of the site?	<u>—</u>	<u>X</u>	<u>X</u>

	YES	NO	TO BE DISCUSSED IN EIS/EIR
10) <u>Water</u>			
* (a) Substantially degrade water quality, or contaminate a public water supply?	—	X	X
* (b) Substantially degrade or deplete ground water resources, or interfere substantially with ground water recharge?	—	X	X
* (c) Cause substantial flooding, erosion or siltation?	—	X	X
11) <u>Energy/Natural Resources</u>			
* (a) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner?	X	—	X
(b) Have a substantial effect on the potential use, extraction, or depletion of a natural resource?	—	X	X
12) <u>Hazards</u>			
* (a) Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	X	—	X
* (b) Interfere with emergency response plans or emergency evacuation plans?	X	—	X
(c) Create a potentially substantial fire hazard?	—	X	—
13) <u>Cultural</u>			
* (a) Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	—	X	X
(b) Conflict with established recreational, educational, religious or scientific uses of the area?	—	X	X
(c) Conflict with the preservation of buildings subject to the provisions of Article 10 or Article 11 of the City Planning Code?	X	—	X
C. <u>OTHER</u>	YES	NO	TO BE DISCUSSED IN EIS/EIR
Require approval and/or permits from City Departments other than Department of City Planning or Bureau of Building Inspection, or from Regional, State or Federal Agencies?	X	—	—
D. <u>MITIGATION MEASURES</u>	YES	NO	N/A TO BE DISCUSSED IN EIS/EIR
1) Could the project have significant effects if mitigation measures are not included in the project?	X	—	X
2) Are all mitigation measures necessary to eliminate significant effects included in the project?	—	—	X
	UNKNOWN at this time		

E. MANDATORY FINDINGS OF SIGNIFICANCE

YES NO ^{TO BE}
DISCUSSED
IN EIS/EIK

- *1) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or pre-history?
- *2) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?
- *3) Does the project have possible environmental effects which are individually limited, but cumulatively considerable? (Analyze in the light of past projects, other current projects, and probable future projects.)
- *4) Would the project cause substantial adverse effects on human beings, either directly or indirectly?

— X X
— X X
X — X
— X X

F. ON THE BASIS OF THIS INITIAL STUDY

- I find the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.
- I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers _____, in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.
- X I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Barbara W. Sahm

BARBARA W. SAHM
Environmental Review Officer
for

LUCIAN R. BLAZEJ
Director of Planning

DATE:

June 28, 1995

BWS:OER/23/4-13-92

FEDERAL
Advisory Council on Historic Preservation

Federal Aviation Administration

National Oceanic & Atmospheric Administration
ATTN: Denise Klimas

U.S. Army Corps of Engineers
Sacramento District

U.S. Coast Guard
Marine Safety Office, San Francisco Bay

U.S. Department of the Interior
Office of Environmental Policy and Compliance

U.S. Department of the Interior
Office of Environmental Policy and Compliance

U.S. Department of the Interior
Bureau of Indian Affairs

U.S. EPA
Office of Federal Activities

U.S. EPA Region IX
Office of Regional Counsel

U.S. EPA Region IX
Office of Federal Activities
Environmental Review Section

U.S. Fish & Wildlife Service
Division of Ecological Services

U.S. Senators
The Honorable Barbara Boxer

The Honorable Dianne Feinstein

U.S. Representatives
The Honorable Tom Lantos

The Honorable Nancy Pelosi

Navy
Commander, Naval Base (COMNAVBASE) (Code 03)
San Francisco Naval Station, Treasure Island

Commander-in-Chief Pacific Fleet (CINPACFLT) (Code
N44)
U.S. Pacific Fleet

STATE
California Air Resources Board

California Coastal Commission, Land Use

California Department of Fish and Game
Region 3, Coastal Region

California Department of Parks and Recreation

California Department of Transportation
Office of Joe Browne, District Director

California Department of Water Resources

California EPA
Department of Toxic Substances Control
Planning Section

California EPA
Department of Toxic Substances

California State Office of Historic Preservation

California Office of Planning and Research
State Clearing House

California State Lands Commission

State Senate
The Honorable Quentin Kopp

The Honorable Milton Marks

State Assembly
The Honorable Willie Brown

The Honorable John Burton

BAY AREA/REGION
Association of Bay Area Governments
Director of Environmental Services

Bay Area Air Quality Management District

Bay Conservation & Development Commission

Metropolitan Transportation Commission

Pacific Gas & Electric Company

Water Quality Control Board
San Francisco Bay Region

CITY AND COUNTY OF SAN FRANCISCO
Hetch Hetchy Water & Power

MUNI Service Planning

Planning Department, City and County of San Francisco

Port of San Francisco

San Francisco Board of Supervisors
Select Committee on Base Closures

San Francisco Chief Administrative Officer

San Francisco City Attorney's Office

San Francisco Department of Public Health
Bureau of Toxics

San Francisco Fire Department

San Francisco Housing Authority

San Francisco Mayor's Office

San Francisco Police Department

San Francisco Public Works Department
Bureau of Environmental Regulation and Management

San Francisco Recreation and Parks Department
McLaren Lodge

San Francisco Redevelopment Agency

San Francisco Solid Waste Management

San Francisco Water Department

ENVIRONMENTAL ORGANIZATIONS
Audubon Society
Golden Gate Chapter

Bay Keeper Society

California Environmental Trust

California Native Plant Society
Yerba Buena Chapter

Friends of Candlestick Point
Natural Resources Defense Council
Restoring the Bay Campaign
San Francisco for Reasonable Growth
Sierra Club
San Francisco Bay Chapter
Sierra Club
MEDIA
Asian Week
Bay City News Service
Chinese News Service
Chinese Times
El Bohemio News
International Daily News
Korea Central Daily News
New Bayview Newspaper, Mary Ratcliff
Nichi Bei Times
Philippine Examiner Today
Potrero View Newspaper
San Francisco Bay Guardian
San Francisco Bay Times
San Francisco Chronicle, Press Office
San Francisco Examiner
San Francisco Independent
San Francisco Weekly
The New Fillmore Newspaper
The Sun Reporter
The Tenderloin Times

NEIGHBORHOOD AND COMMUNITY ORGANIZATIONS

Bayview Coordinating Council

Bayview Hill Neighborhood Association

Bayview Hunters Point Democratic Club

Bayview Merchants Association

Bayview Welfare Support Services

Bayview-Hunters Point Crime Prevention Council

Bayview-Hunters Point Ecumenical Council

Bayview-Hunters Point Foundation Administration
Offices

Businesses of Hunters Point Shipyard

Coalition on Homelessness

Hunters Point Boys and Girls Club

Hunters Point Community Youth Park

Hunters Point Homeowners Association

Hunters Point Recreation Center

Little Hollywood Improvement Association

Mariners Village Homeowners Association

McKinnon Avenue Community Club

Moran Heights Homeowners Association

New Bayview Committee

New Hp Homeowners Assoc.

Samoan Mo Samoa

San Francisco Chamber of Commerce

San Francisco Council of District Merchants

San Francisco Heritage

San Francisco Housing & Tenants Council

San Francisco League of Neighborhoods

San Francisco Organizing Project

San Francisco Planning and Urban Research Association

San Francisco Tomorrow

SMWM

South Bayshore CDC

Southeast Community Facility Commission

Southeast Economic Development Group

Youth Community Developers

MAYOR'S CITIZENS ADVISORY COMMITTEE

Jesse Banks

Tony Dominski
West Edge Design

Neil Gendel
Consumer Action

Linda Hope
(HPS Artists Association)

Leslie Katz, Attorney at Law
Mayor of San Francisco, Appointed Public
Representative

Edward Mackin

Carolyn McDaniels

Leroy Morishita
SFSU Admin. Plan

Cynthia Choy Ong

Willa Sims

Clarence Stern

Leon Thibeaux, Jr.

Alma Robinson
Cal. Lawyers for the Arts

Karen Pierce

Francis J. O'Neill

Diana Oertel

Willie Bell McDowell

George Mix, Jr.
San Francisco Urban League

Scott Madison

Yvette McCoy
Progress Seven

Leroy King
c/o ILWU

Glen Lezama
Union Bank

Joyce Jones

Shirley Jones, Chair
Caheed Child Care Center

Heidi Hardin

Tony Gray
Precision Transport

Rochele Frazier
S.F. Senior Escort Program

Ethel Garlington
Southeast Community Facility

Bernice Brown
Southeast Community College

Saul Bloom
ARC Ecology / Arms Control Research Center

Manuma Tui

Alfred Williams
CAC Consultant

Lori Yamauchi

NATIVE AMERICANS
Linda G. Yamane
Ohlone Group

Rosemary Cambra, Chairperson
Muwekma Indian Tribe

Andrew Galvan
Ohlone Group

Irene Zwierlein, Chairperson
Amah Tribal Band

Jenny Mousseaux (Mcleod)

Alex Ramirez

Ann Marie Sayer, Chairperson
Indian Canyon Mutsun Band of Costanoan

Jakki Kehl
Ohlone Group

Kenneth Marquis
Ohlone Group

Patrick Orozco
Ohlone Group

Ella Mae Rodriguez
Ohlone Group

RAB Members

Nicholas S. Agbabiaka
Bayview Hunters Point Homeowners and Residential
Community Development Council

Carolyn Bailey

Sy-Allen Browning
South East Economic Group (SEED)

CDR Al Elkins
Bay Area Base Transition Coordinator

Michael Harris

Karen Huggins

Wedrell James

Alydda Mangelsdorf
U.S. EPA (H-9-2)
Federal Facilities Cleanup Office

Michael Martin
CERCLA/NRDA Unit
California Department of Fish & Game

Michael McClelland (Code 62.3)
Engineering Field Activity West

Ilean McCoy

Nancy Goodson

U.S. Department of the Interior

Charlie Walker
African American Truckers Association

Caroline Washington

Gwenda White

David Umble

Silk Gaudain

Interested Individuals

Douglas Kern
Kern Mediation Group

Sally Ann Law
RAND
P.O. Box 2138
Santa Monica, CA 90407-2138

PUBLIC NOTICE

The United States Navy, in conjunction with the City and County of San Francisco, announces their intent to prepare a Joint Environmental Impact Statement/Environmental Impact Report (EIS/EIR) to evaluate significant environmental impact of disposal and potential reuse of the Hunters Point Naval Shipyard. This action is being conducted in accordance with the Defense Base Closure and Realignment Act of 1990 (Public Law 101-510) as implemented by the 1993 base closure process.

The Hunters Point Shipyard Reuse Plan, developed by the City and County of San Francisco, will be the proposed action evaluated in the EIS/EIR. The EIS/EIR will address the potential significant impacts to the environment that may result from the reuse of Hunter Point.

A PUBLIC SCOPING HEARING will be held

**Wednesday, July 12, 1995 at 5:00 p.m.
at the following address:**

**Southeast Community Facility
1800 Oakdale Avenue
San Francisco, CA**

The purpose of this hearing is to receive written and verbal comments regarding significant environmental impacts of the disposal and potential reuse of Hunters Point Naval Shipyard. A brief presentation of the EIS/EIR process and the Reuse Plan and Alternatives will precede the request for public comment. Navy and City of San Francisco representatives will be available at this hearing to receive comments from the public regarding issues of concern to the public.

Agencies and the public are also invited and encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. Written statements must be received at the address below no later than July 30, 1995 to be considered in this scoping process:

**ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-5006
ATTN: MS. MARY DOYLE,
CODE 185
Phone (415)244-3024
Fax (415) 244-3737.**

Public Scoping Hearing
of the
Environmental Impact Statement/
Environmental Impact Report
on the Disposal and Reuse of
Naval Shipyard Hunters Point
San Francisco, CA

Attendance

Name	Affiliation
Eve Bach	Arc Ecology
Tad & Laura Baidenthal	individual
Esther Blanchard	President-R.O.S.E.S.
Saul Bloom	Arc Ecology
Amy Brownell	SF Dept. of Public Health
Calvin Davis	Homeowners Association
Bisun Duit	DSS Group
Al Elkins	DOD BTC
Manual J. Ford, Jr	Terra Environmental
Ruth Goldstein	individual
David Haasie	Base Transition Office
David Henderson	ABU
Alan Hopkins	Golden Gate Audobon
Tanya Joyce	individual
Doug Kern	Kern Meditation Group
Harvey McDowell	individual
Willie B. McDowell	Citizen Advisory Committee (CAC) Shipyard
Deb Moore	individual
Tatiana Roodkowsky	PRC EMI
Cyrus Shabahan	Cal/EPA Dept. of Toxics and Substance Control (DTSC)
Kirstan Williams	individual
Al Williams	Hunters Point CAC
Jane W. Wrench	individual
Marvin Yee	Rec/Park

Compilation of Wildlife Observations At Hunters Point

by Resident Artists 1995

CC = Carolyn Crampton
 HM = Heather MacDougall
 JL = Jeffrey Long
 JR = Joan Rhine
 RG = Ruth Goldstien
 TA = Tor Archer
 TJ = Tanya Joyce
 unk = unknown

Artist	Type	Common Name
JL	bird	American coot
unk	bird	American robin
JL	bird	American robin (nesting)
JL	bird	American widgeon
JR	bird	Anna's hummingbird
JR	bird	black-tailed hare
JR	bird	barn owl
RG	bird	barn owl
TA	bird	barn owl
JL	bird	barn owl (nesting)
JL	bird	barn swallow (nesting)
JL	bird	black-crowned night heron
JR	bird	black-crowned night heron
RG	bird	black-crowned night heron
TA	bird	black-crowned night heron
JL	bird	brown pelican
RG	bird	brown pelican
unk	bird	brown pelican
JL	bird	bushtit
JR	bird	bushtit
JL	bird	California gull
RG	bird	California quail
unk	bird	California quail
TA	bird	California towhee
JL	bird	California towhee (nesting)
RG	bird	Canada goose
unk	bird	Canada goose
JL	bird	canvasback
JL	bird	Caspian tern
JL	bird	cedar waxwing
JL	bird	common crow
JL	bird	double-crested cormorant
JL	bird	European starling

Artist	Type	Common Name
RG	bird	European starling
TA	bird	European starling
RG	bird	ferruginous hawk
JL	bird	golden eagle
RG	bird	golden eagle
JL	bird	great blue heron
RG	bird	great blue heron
TA	bird	great blue heron
unk	bird	great blue heron
JL	bird	greater scaup
JL	bird	hooded oriole (nesting)
JR	bird	house finch
TA	bird	house finch
unk	bird	house finch
JL	bird	house finch (nesting)
RG	bird	house finch (nesting)
CC	bird	kestrel
RG	bird	kestrel
TA	bird	kestrel
JL	bird	kestrel (nesting)
TA	bird	killdeer
JL	bird	killdeer (nesting)
JL	bird	least tern
JL	bird	lesser scaup
JL	bird	long-billed dowitcher
TA	bird	meadowlark
TA	bird	mockingbird
RG	bird	mourning dove
TA	bird	mourning dove
JL	bird	mourning dove (nesting)
JL	bird	northern flicker
JR	bird	northern flicker
CC	bird	northern mockingbird
JR	bird	northern mockingbird
unk	bird	northern mockingbird
JL	bird	northern mockingbird (nesting)
unk	bird	peregrine falcon (pair)
RG	bird	pheasant
JL	bird	raven
RG	bird	raven

Artist	Type	Common Name
unk	bird	raven
JL	bird	red-tailed hawk
JR	bird	red-tailed hawk
RG	bird	red-tailed hawk
TA	bird	red-tailed hawk
unk	bird	red-tailed hawk
RG	bird	red-winged blackbirds
JR	bird	red-winged blackbird
JL	bird	red-winged blackbird (nesting)
JL	bird	ring-billed gull
JL	bird	ring-necked pheasant
JL	bird	ruddy duck
JL	bird	scrub jay
RG	bird	scrub jay
RG	bird	sharp-shinned hawk
JL	bird	snowy egret
JL	bird	song sparrow
RG	bird	Stellar's jay
JL	bird	surf scoter
RG	bird	Swainson's hawk
TA	bird	turkey vulture (occasionally)
JL	bird	western gull
JL	bird	western screech owl
JL	bird	white-crowned sparrow
JL	bird	willit
unk	invert	monarch
JL	mammal	black-tailed hare
TA	mammal	black-tailed hare
RG	mammal	black-tailed hare
JL	mammal	Botta's pocket gopher
JL	mammal	California ground squirrel
CC	mammal	domestic dog
CC	mammal	feral cat
unk	mammal	feral cat
JL	mammal	grey fox
JR	mammal	harbor seal
JL	mammal	hump-backed whale
JL	mammal	raccoon
JL	mammal	sea lion
RG	mammal	sea lion (wintering)

Artist	Type	Common Name
TJ	plant	bird'sfoot trefoil
CC	plant	coyote brush

General Observations

JL	bird	blackbird
RG	bird	eagle like
RG	bird	egret
unk	bird	falcon
unk	bird	gulls
RG	bird	hawk
unk	bird	hawk
JL	bird	hummingbird
RG	bird	hummingbird
JL	bird	nuthatch
HM	bird	owl
RG	bird	owl
unk	bird	owl
JL	bird	sandpiper
RG	bird	shorebirds/ gulls/ terns
RG	bird	small yellow-marked song bird
TA	bird	sparrow
unk	invert	butterflies
unk	invert	dragonfly
JR	mammal	fox
RG	mammal	fox
TA	mammal	fox
unk	mammal	fox
RG	reptile	lizard
TA	reptile	lizard
unk	reptile	lizard
TA	reptile	two dead snakes

MANUEL J. FORD JR.
Chief Environmental Engineer

TERRA ENVIRONMENTAL

Environmental Repair

Ms. Mary Dole
Environmental Planning Branch, Code 185
Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno , CA 94066-5006
415 244 3024

7/27/95

RE: EIS/EIR

SUBJECT: Air Quality/Naval Shipyard Hunter Point

Dear Ms. Dole,

The Public Scoping Meeting of July 12, 1995, was very enlightening and revealed the need for adequate local air quality control, especially in view of the present and upcoming reuse alternatives for the Naval Shipyard Hunters Point.

I began Terra Environmental to handle the environmental issue of Air Quality and how to improve air quality and/or maintain environmental compliance with the Clean Air Act of 1990 and the PM 10 indicator.

The inclusion of an Atmospheric Air Recycling Facility as a necessary part of the Final Reuse Plan, to ensure that good air quality in the area is maintained, would be an A+ in environmental planning.

An Atmospheric Air Recycling Facility is a facility that as a basic function filters and recycles large quantities of outside air. These facilities are equipt with all-weather vacuum units similar to those used in the mechanical street sweepers, only directed skyward, and are equipt with a combination of 0.6 to 0.1 micron reuseable air filters, for the removal of airborne particles and particulate matter (PM) and an air flow-through for recycling the filtered clean air back into the atmosphere for breathing purposes.

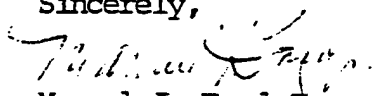
The estimated size of the area needed for such a facility is in the range of 1,500 to 2,500 sq. ft. enough to handle one to three air recycling units, i.e., 200,000 to 600,000 CFM (cubic feet per minute).

During the said Public Scoping Meeting, Mr. Paul Lord, Senior Planner for the City of San Francisco Planning Dept. and myself discussed the subject of the Atmospheric Air Recycling Facility and it's place in the proposed Reuse Plan.

We established that the facility is a viable concept and that placement of such a facility would best serve it's purpose placed in the vicinity of Drydock 4. This is after measurements of wind direction and speed, noise levels, and cost has been determined.

I am looking forward to working with you on this project please contact me at your earliest convenience.

Sincerely,


Manuel J. Ford Jr.
Chief Environmental Engineer
Terra Environmental

P.S. I have included my most recent research report, June 1995.

Address: TERRA ENVIRONMETAL
457 90th St. #2
Daly City, CA 94015

Tel: 415 991 2865

TERRA ENVIRONMENTAL

Environmental Repair

TERRA ENVIRONMENTAL RESEARCH REPORT

JUNE 1995 #1

I founded Terra Environmental to come face to face with our global environmental situation, of which global warming is just the tip of the iceberg, and to provide needed answers, services and products, to help reverse a presently terminal situation.

In searching for a cure for Earth's environmental problem, one first had to search for the cause, the real cause, that could be reversed with the correct human intervention.

As Chief Researcher & Engineer of Terra Environmental my most recent findings are:

1. That a new spark plug displays magnetic susceptibilities.
2. That a recently used spark plug is magnetized due to the spark plug's interaction in the electrical system of a motor vehicle. (1. & 2. tested using a compass and a very small sewing needle)
3. That global warming, is the result of reverse electromotive force (CEMF).

1. To better comprehend the true effects of an internal combustion engine and the automotive electrical system on the Earth's magnetic field, our environment, an analogy of the involved processes or subprocesses is in order. My findings are based on and in conjunction with the molecular theory of magnetism, which is based on the theory that all atoms and molecules have magnetic properties.

2. The modern automobile with it's complex electrical system contains current carrying conductors which produce magnetic fields. The electromechanical and electromagnetic parts as well as the body (if metal) and the chassis, produce several magnetic fields of various strength and size. This is due to the fact that electric current is a source of magnetism.

3. The automotive electrical system contains two main circuits, the insulated circuit and the ground circuit. At this time we will look at the ground circuit and it's part in electromagnetism.

4. The ground circuit contains the largest amount of electrical conductor material, i.e. the metal parts such as the chassis and engine. As part of the ground circuit the modern engine is designed with the necessary fittings and connectors for the placement of the starter motor, generator/alternator, distributor, and spark plugs, who's functions are dependant on the ground circuit via the engine.

5. The automobile's engine being part of the ground circuit qualifies as a current carrying conductor, surrounded by a magnetic field of it's own configuration. The other automotive parts that are sources of electromagnetism and produce strong magnetic fields, located on or near the engine itself are: the starter motor, generator/alternator, and most important, the ignition coil.

6. Designed to operate electromagnetically, the ignition coil, through mutual induction, increases battery voltage to many thousands of volts. The high voltage electrical current from the ignition coil is sent through a high voltage cable(spark plug cables) to the spark plugs.
7. Made of paramagnetic material, the spark plug, when exposed to the electromagnetic properties of the ground circuit and ignition coil, over a short period of time becomes an electro-semi-permanent magnet with the electrodes performing the function of positive and negative poles(electropositive and electronegative), an example of polarization and magnetism. The spark plug passes electrical current through and ignites, to produce a chemical change, a chemical mixture of volatile liquid hydrocarbons and compressed air, the process of internal combustion.
8. The process of internal combustion using gasoline, the catalysis being electric current, which also produces heat, contains a distinctive process or subprocess, that of electrolysis. A process that when in use gives rise to a reverse electromotive force.
9. The process of electrolysis as applied in the field of electrometallurgy is based on the application of electric current as a source of heat for the separation of metals from alloys. An example of electrolysis deposition at work in an automobile's electrical system is witnessed by examining the contact points of a distributor.
10. If the contact points on the distributor have developed a crater or depression on one point and a small amount of metal on the other, the cause is an electrolysis action of transferring metal from one contact to the other, ie. electrodeposit.
11. The electric current, which appears as a spark of light as it crosses the distributor's contact points and the spark plug's electrodes, ignites the gasoline (similar to electrolyte). The spark ignites the gasoline with 20,000 to 60,000 volts, an average 8 kilowatts of electricity, to cause an explosion within the engine cylinder walls.
12. The heat caused by electrolysis in electrometallurgy, used for separating metal from metal, is a desired effect. The heat caused by electrolysis in internal combustion is considered an undesired effect and in fact leads to the decomposition of the metal parts of the engine, ie. internal engine wear. The temperature of the heat, in the case of internal combustion, can exceed 20000°F within the engine's cylinder walls. That's more than enough heat to release molecules of metal from valves, pistons, spark plugs, and cylinder walls. Burnt valves and pitted pistons provide the perfect visual and physical evidence of internal engine molecular deterioration or decomposition due to electrolysis action.

13. Another effect of electrolysis in the act of automotive, aviation, and ship, internal combustion, is the process of polarization in the production of carbon monoxide and nitric oxide gases. Polarization is the process by which gases, electromagnetized molecules, produced during electrolysis are deposited on the electrodes, giving rise to a reverse electromotive force.

14. As a subprocess of the automotive internal combustion process, electrolysis combines gasoline(which contains hydrocarbons), air and metal(mostly iron molecules which are paramagnetic, divalent and trivalent) and forms gaseous oxides of carbon (a tetravalent element) and nitrogen, ie. carbon monoxide and nitric oxide.

Carbon monoxide gas if breathed can cause death. Nitric oxide in contact with air forms reddish-brown fumes of nitrogen peroxide. The air at one time was 70% percent nitrogen, our gasoline vehicles have turned a percentage of that to nitric oxide and nitrogen peroxide. Nitric oxide is also used in the building of explosives.

15. Most of the polarized molecules, in the form of gases, electronegatively charged with 20,000 volts of electrical energy, escapes through the exhaust pipe(s) into the air. The electromagnetized molecules find their way onto, into or lines up with the lines of force of the Earth's magnetic field(similar to a magnet covered by a piece of paper and iron filings or dust sprinkled on the paper to show the magnet's lines of force)and are electrodeposited on and near the magnetic pole or poles, giving rise to a reverse electromotive force(CEMF), ie. causing an electrical short in the more sensitive levels of the Earth's magnetic field. This is due to the aligned antiparallel of the magnetic moments, the result of a strong negative interaction*, leading to the complete cancellation of the neighboring atomic moments and results in zero net magnetization.

* NOTE: of the hundreds of million combustion engine vehicles on this planet, which includes automobiles, aircraft, and ships, the majority contains negative ground(negative polarity) ground circuits.

In conclusion, we have a situation here, our life support system is failing, we need correct answers and actions and quickly.



Manuel J. Ford Jr.
Chief Environmental Engineer

TERRA ENVIRONMENTAL

Environmental Repair

Global Environmental Emergency Procedures

Terra Environmental recommends the following emergency procedures;

1. To be released on a regular basis in the lower atmosphere, various quantities of filtered compressed air, to dilute concentration of airborne pollutant gases and to increase Earth's breathable air supply.
2. Aerial seeding of ozone in the upper atmosphere over the Antarctic Pole and the Great Lakes Region of the United States.
3. The adoption of Local & International legislation limiting the production of new motor vehicles including airships and water vehicles until electromagnetic safeguards can be installed.

CONFIDENCE IS HIGH

Terra Environmental is in the planning stage of constructing an Earth-based, Earth-friendly Atmospheric Air Recycling Facility. This new facility will filter and mechanically recycle approximately 6000 to 200,000 cubic feet per minute per day of outside air. Electronic filtering was considered but due to the nature of the emergency mechanical particulate matter filtering units were chosen.

Need all the help you can give, please contact me as soon as possible.

Thank You!

Manuel J. Ford Jr.
457 90th St. #2
Daly City, CA 94015
415 991 2865
E-mail contact: thekid@seeker.glide.org

May 29, 1995
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July 19, 1995

Ms. Mary Doyle (Code 185)
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, CA 94066-5006

Dear Ms. Doyle:

The San Francisco Recreation and Park Department appreciates the opportunity to express concerns regarding the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the disposal and reuse of the former Hunters Point Naval Shipyard. The following concerns are offered:

1. During the development of a reuse plan under the guidance of the Redevelopment Agency and Planning Department, the San Francisco Recreation and Park Department participated in identifying recreation and open space opportunities as they relate to existing City-wide facilities. However, these recommendations were offered with no anticipation of the residential (local and city-wide) and worker population to be served. A study would be appropriate to evaluate the project's adherence to the National Park and Recreation Association standards for neighborhood- and district-serving open space.
2. Ownership of the proposed recreational and open spaces should be addressed. Areas which are intended to be owned by the City and placed under the jurisdiction of the Recreation and Park Department should receive adequate funding for development, staffing, and maintenance. An economic analysis should be included as part of the proposed EIS/EIR.
3. Compliance of the proposed plan should be evaluated in its conformance to public plans and policies, particularly the Recreation and Open Space Element of the San Francisco Master Plan.

The Recreation and Park Department looks forward to reviewing the EIS/EIR and in a successful reuse of the former Hunters Point Naval Shipyard. If you have any questions, please contact Deborah Learner at (415) 666-7087 or Marvin Yee at (415) 666-7130.

Sincerely,

A handwritten signature in black ink, appearing to read "Marvin Yee", followed by a horizontal line.

Marvin Yee
Project Manager

hunter12.doc

1807 13TH STREET
SACRAMENTO, CALIFORNIA 95814
(TDD/TT) 1-800-735-2929
(916) 322-0595

REC'D.

JAN 13 1994

Dept. of City Planning

January 11, 1995

Planning Programs

File Ref.: W 25114

DER

Barbara W. Sahm
Environmental Review Officer
Department of City Planning
1660 Mission Street
San Francisco, CA 94103-2414

RE: Hunters Point; Notice of Preparation of EIS

Dear Ms. Sahm:

This is written to respond to the Notice of Preparation (NOP) of an Environmental Impact Statement (EIS) for the base closure and reuse of Hunters Point Naval Shipyard.

By way of general background, upon admission to the Union in 1850, California acquired nearly four million acres of sovereign land underlying the State's navigable waterways and tide and submerged lands. These sovereign lands include, but are not limited to, the beds of more than 120 navigable rivers and sloughs, nearly 40 navigable lakes, and the tide and submerged lands in the bays of the State and within a three mile wide band along the coast and surrounding the offshore islands. These lands are managed by the State Lands Commission (SLC) unless there has been a grant of these interests by the Legislature to a local government for its day-to-day administration.

A substantial part of Hunters Point Naval Shipyard (Hunters Point) was historically tide and submerged lands of San Francisco Bay which has since been filled. This type of land, together with the unfilled tide and submerged lands which remain, are commonly referred to as public trust land or sovereign land.

Pursuant to state legislative acts, portions of the tide and submerged lands at Hunters Point were sold by the State into private ownership pursuant to a plan established by Board of Tideland Commissioners, generally referred to as BTLC lots. To the extent that the BTLC lots had been filled and removed from tidal action as of 1980, these lands were held to be free of public trust title in the case of City of Berkeley v. Superior Court of Alameda County (1980) 26 Cal. 3d 515. Any BTLC lots which remained subject to tidal action as of that date are subject to a public trust easement. Intermingled within the sold BTLC lots were reserved streets which are subject to the trust in fee.

Other tide and submerged lands at Hunters Point were included within sales by the State in the last century referred to as tidelands patents. The tidelands patent program was separate from the activities of the Board of Tideland Commissioners. Lands sold by tidelands patent remain subject to a public trust easement whether filled or not. (People v. California Fish Company (1913) 166 Cal. 576).

Staff of the SLC have met with staff of the San Francisco Redevelopment Agency, City Attorney, and Planning Department to discuss proposed land use plans for Hunters Point and the public trust character of parts of the property. These discussions have resulted in the conclusion that the public trust is best served by consolidating public trust lands which are in fee or easement into useable properties on or near the water which, given the land title history of the area, are not now subject to the trust.

The "Education and Arts Alternative Plan" for Hunters Point appears to promote this consolidation of trust lands in that significant areas along the water and inland of it are set aside for public trust purposes such as maritime uses, museums depicting the history of the Shipyard, and parks and open space.

Ultimately, any settlement of land title interests will require an exchange of land which will result in freeing more inland properties from the trust and placing the trust on other lands on or near the waterfront. An exchange of land must be supported by a finding that the land brought into the trust has an economic value equal to or greater than those freed from the trust.

Separate from the decision that the public trust will be served by a consolidation of interests, any exchange of lands must also be supported by a finding that the economic value of the lands brought into the trust are equal to or greater than those freed from the trust. The purpose of this is to assure that trust lands are kept whole both in utility and in value. We have informed the San Francisco Office of Base Conversion that, if the value of the lands on or near the water is not sufficient to offset the value of more inland trust property, it may be necessary to bring additional lands adjacent to the maritime area (now tentatively identified for Industrial, Business Park, or Research and Development) into the trust. Any exchange lands which fall within these use areas could be leased on an interim basis by the City for non-trust uses with subsequent review for trust uses after applicable leases have expired.

We have reviewed your NOP with the attached Initial Study keeping in mind the decisions which this Commission may be required to make in the future for the settlement of land title questions and possible leasing at Hunters Point. We would appreciate treatment of several subject areas in the EIS:

Barbara W. Sahm
Page 3
January 11, 1995

1. An analysis of the potential for increased time-related and non-time-related traffic generated by the proposed development, may have. Please identify associated needs of the Point for support of time uses and the possible impacts of dredging.
2. An analysis of the potential for increased time-related and non-time-related traffic generated by the plan in relation to the existing commercial and industrial activities.
3. An analysis of the potential for increased time-related and non-time-related traffic generated by the plan in relation to the existing residential and ongoing commercial activities.

Thank you for the opportunity to comment.

Sincerely,

David R. Ph...

DAVE PLUMMER,
Public Land Manager

cc: Larry Florin
Blake Stevenson
Carla Caruso
Jane Sekelsky

CRAMPTON

CAROLYN RITCHIE CRAMPTON . 215 - 27TH STREET, SAN FRANCISCO, CALIFORNIA 94131 . 415-826-8266

July 11, 1995

Deborah
The Point office

re: Endangered/native plant and animal sightings at Hunters Point Shipyard

Dear Deborah,

Here's a copy of a letter I sent Barbara Sahm at the City Planning Commission for whqt it's worth. (It is too late to get this to Ruth Goldstein, but if you see her perhaps you can show this to her If I do make it to the meeting, I'll probably be there late.)

In response to a notice sent out by The Point office, the following is my collection of animal sightings. As a landscape painter, avid birdwatcher (novice) and animal lover, I am always asking other artists what they have seen. I have enclosed map to explain where these sightings were.

Since we are not allowed to wander around base, I have never visited the wetlands. I once snuck up the hill to get a look at the undeveloped hillside where there are supposed to be natural springs. I was hoping to locate some native amphibians or snakes there, but was afraid security would get mad if I went any farther.

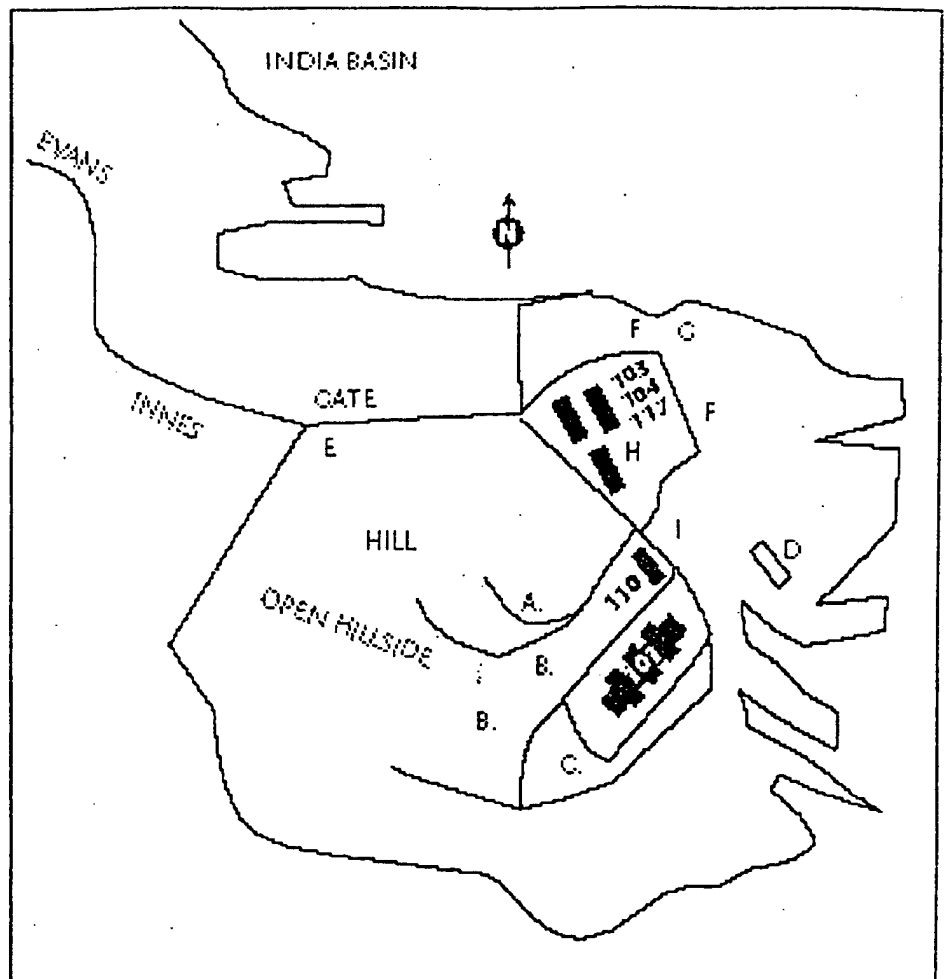
Lastly, since they are now filling in the remaining wetlands area along Innes Ave., the pressures on the Point's habitat must be intensifying.

(Refer to map for location of letter)

- A. ~~Hummingbirds~~ (unknown type) near trees on the way up the hill. They could be migratory—what happens if they cut down those trees?
- B. ~~Mockingbirds~~ and many other birds (sparrows, finches) in trees and brush near hill.
- B. Diana Krevsky says she has often seen large birds, either ~~herons or egrets~~ resting in the trees from her window, only at certain times of the year, perhaps they were migrating
- C. Jane Wrench has seen ~~owls~~ several times in the parking lot heading to the hill at dusk
- D. Family of ~~crows~~ roosting on waterfront shipyard buildings, along with many seagulls
- E. ~~Red-tailed hawk~~ and ~~turkey vultures~~ above or in Palm Trees near the main gate

- F. I saw a family (about 4) of unusual birds—I think they were ~~struts~~
- G. Open studio visitors told me they saw big ~~robins~~ near the water
- H. Chris Braun told me there is a ~~cat~~ living in redwood trees near Building 117, and that he has seen an owl there frequently. I have seen mockingbirds in the redwoods and oaks here.
- I. I saw a feral cat and local dogs hunting birds while I was landscape painting. The birds are located anywhere there is ~~cover~~ and ~~native~~ plants that have sprouted up near abandoned buildings.

- There should be lots of wetlands birds, and burrowing owls somewhere on base



All along in the planning process I have been lobbying for preservation of habitat instead of what some call "landscaping". At the very least, ~~the plan should preserve native vegetation if the inhabitants of the Point have any hope of surviving.~~ It's all very well to tear down an artists building and build another, but what do the hummingbirds and other animals do while their habitat is destroyed before new habitat is built? They can't go elsewhere because the few other remaining areas already are carrying their threshold level of animals. ~~I have seen many birds, including feral cats, dogs, and dogs, being located in the wetlands area, as many of the employees are also on grounds nearby. The Avulsion project, however, has a high wall placed between the wetlands habitat and the open area. An alternative might be building a boardwalk, raised and separated from the shore, and above the high level.~~

I hope this information is useful to you. I hope to attend the meeting tomorrow.

Sincerely,

Carolyn Crampton

Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, Ca 94066-5006

10JL95

Dear Ms. Doyle,

Enclosed please find my submission for the public scoping hearing that shall concern the Hunter's Point Shipyard Reuse plan. I intend to be at the public meeting on July 12, but thought it best to send along a written copy of my version of the future of Hunter's Point, because one can never be sure of what may happen (your car could malfunction, you could get hit by lightning, etc.).

-Sincerely,



Brent Robertson

1200- 17th Avenue #304

San Francisco, CA 94122

Engineering Field Activity, West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, Ca 94066-5006

10JL95

Dear Engineering Field Activity West,

After long and arduous research, I now submit to you the most effective and prudent uses of the Hunter's Point Naval Shipyard Facility. My work began on this subject several years ago and I am pleased to say that the existing EIS/ EIR is a worthy piece of work.

The five parcels should be de-toxified as well as can be, with some stipulations. Namely, the work should be done by citizens of the immediate area, with priority to minorities and within that, their proximity to the site. Second, they should be very careful, so as not to contaminate themselves, loved ones or visitors to the worksite. Giant signs should be installed to remind them of this.

I recommend that giant vacuum cleaner- type machines be used, and the refuse deposited in underground shelters, somewhere with little population, like Iowa. After this would come step two, sealing the parcels in alternating 6.78' layers of asphalt, concrete and turf, with the topmost layer consisting solely of sod.

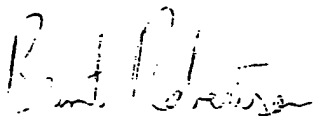
Once this is accomplished, the re-use of facilities must be implemented *at once*, but with certain provisions. Existing tenants should be allowed to remain where they are (unless their parcel is being cleansed), but overall, the site should return to its maritime origins. Hence, the dry-docks should once again fix and/ or create sea going vessels, the infirmary should heal the wounded and people should actually *live* in the housing.

The beneficiaries should first be those connected in some way with the site, then come those living in the Bayview area, then those in such neighborhoods as the Excelsior and towns like Brisbane, and so on. This system of ever increasing circles should be the guide line to who gets access... the further out one is, the less priority he or she has.

As each of the five parcels is declared "clean", it should be double checked, and occupied *as soon as possible*, so that the land is not wasted and idle. Aside from the afore-mentioned marine uses, the area almost calls out for several other requisite uses. These include educational structures (in conjunction with City College and the local school district), a Hospice for incurables (which must, unfortunately, be located away from other tenants), an amusement park, city government offices, a Municipal Railway yard, a cattle grazing area, a miniature Indian Reservation, a penal colony, an armory for the National Guard, "Hooverville" homeless encampments, light industrial zones, and an area for the exclusive use of gambling dens. Of course, there many other uses, some of them valid.

The ultimate goal here is, as we area all aware, to make a large portion of the San Francisco Bay Area (and, indeed, it's history) an economical, environmental and eurysthean model for the rest of the world to look to for urban planning and ideal use of space.

-Sincerely,



Brent Robertson

1200- 17th Avenue #304

San Francisco, CA 94122

7/95

Submitted for:

Heather Mac Dougall

Acme Structures

Bldg. 104, HPS

(415) 822-6852

Heather Mac Dougall is a careful observer of ~~out and sediments~~ near her studio. Though these species are not endangered, diverse habitats are needed for the survival of all life. Existing flora and fauna need reliable homes.

Heather also has friends who have suggested ~~to turning the shipyard. A move in that~~
~~structure is the mang-jomalo shipyard~~
~~tenants keep about their observations.~~
~~the diversity of grasses is of special interest~~
~~to Heather.~~

submitted by Tanya Joyce

7/95

Submitted for:

Submarine Papers

Joan Rhine

Jim Meillander

Bldg. 103, HPS

Joan Rhine and Jim Meillander take regular walks around the shipyard. ~~The shipyard is a very busy place with many workers and equipment.~~ ~~There are no workers here.~~ Joan introduced Tanya Joyce to the ~~shipyard~~, who approached Hunters Point during ~~the day~~ ~~of the day~~ ~~the day~~ and fishing boats.

The small shipyard beaches are surprisingly clean, as is the air. ~~The water is very clean and the air is very fresh.~~ ~~The water is very clean and the air is very fresh.~~ ~~The water is very clean and the air is very fresh.~~

submitted by Tanya Joyce

EIS/EIR ON DISPOSAL AND REUSE OF NAVAL
SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD



PLEASE CHECK YOUR AFFILIATION BELOW:

☐ Individual (no affiliation) ☒ Citizen's Group
☒ Private Organization ☐ Elected Representative
☐ Federal State or Local ☐ Regulatory Agency
☐ Government

Name: David Hender
 Organization (if applicable): ABU
 Your Community: BVHP
 Street Address (optional): HUNTERS POINT SHIPYARD BLD 38
 City/State/Zip (optional): SF CA 94124
 Phone # (optional): 415-359-7483

DO YOU WISH TO SPEAK THIS EVENING? ☐ YES ☐ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:

~~_____~~
~~_____~~
~~_____~~

8/4
 copy. Blue highlight
 indicates community concern.
 No NEPA/CEQA concerns
 expressed.

IS/EIR ON DISPOSAL AND REUSE OF NAVAL
SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD



PLEASE CHECK YOUR AFFILIATION BELOW:

☒ Individual (no affiliation) ☐ Citizen's Group
☐ Private Organization ☐ Elected Representative
☐ Federal State or Local ☐ Regulatory Agency
☐ Government

Name: Manuel J. Lopez
 Organization (if applicable): San Francisco
 Your Community: San Francisco
 Street Address (optional): 457 Divisadero St.
 City/State/Zip (optional): San Francisco
 Phone # (optional): 415 991 2865

DO YOU WISH TO SPEAK THIS EVENING? ☐ YES ☒ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:

Good

SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD



PLEASE CHECK YOUR AFFILIATION BELOW:

☒ Individual (no affiliation) ☐ Citizen's Group
☐ Private Organization ☐ Elected Representative
☐ Federal State or Local ☐ Regulatory Agency
☐ Government

Name: BISAN DATT
 Organization (if applicable): DES GROUP
 Your Community: FOURTH SAN FRANCISCO
 Street Address (optional): 514 CALIFORNIA ST.
 City/State/Zip (optional): SOUTH SF CA 94103
 Phone # (optional):

DO YOU WISH TO SPEAK THIS EVENING? ☐ YES ☒ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:

PLEASE SEND INFO TO ABOVE ADDRESS,

~~1000 CALIFORNIA ST. SAN FRANCISCO, CA 94103~~
~~1000 CALIFORNIA ST. SAN FRANCISCO, CA 94103~~
~~1000 CALIFORNIA ST. SAN FRANCISCO, CA 94103~~

EIS/EIR ON DISPOSAL AND REUSE OF NAVAL
SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD



PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☒ Citizen's Group
Private Organization ☐ Elected Representative
Federal State or Local ☐ Regulatory Agency
Government ☐

Name: AL Williams
Organization (if applicable): H.P. & A.C.
Your Community: Hunters Point
Street Address (optional): C/O S.F.R.A.
City/State/Zip (optional): 770 Goldera Circle
Phone # (optional):

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your
comments below and turn them in at this meeting. Thank you.

Comments:

EIS/EIR ON DISPOSAL AND REUSE OF NAVAL
SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD



PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☒ Citizen's Group
Private Organization ☐ Elected Representative
Federal State or Local ☐ Regulatory Agency
Government ☐

Name: EVE BACH
Organization (if applicable): Arc Ecology
Your Community:
Street Address (optional): 853 Market St
City/State/Zip (optional): SF CA 94103
Phone # (optional): (415) 455-1786

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your
comments below and turn them in at this meeting. Thank you.

Comments:



EIS/EIR ON DISPOSAL AND REUSE OF NAVAL SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD

PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☒ Citizen's Group
Private Organization ☐ Elected Representative
Federal State or Local ☐ Regulatory Agency
Government ☐

Name: David Anderson
Organization (if applicable):
Your Community:
Street Address (optional):
City/State/Zip (optional):
Phone # (optional):

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:

Social/Economic Issues, Regarding
Preliminary/Final Report to the Shipyard Scope
Investigation on Shipyard Development Too,
"China Basin Local Community Promises
and Potential Covenants, No Repeat of
China Basin, U.S. Interior, S.F. and CA"



EIS/EIR ON DISPOSAL AND REUSE OF NAVAL SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD

PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☒ Citizen's Group
Private Organization ☐ Elected Representative
Federal State or Local ☐ Regulatory Agency
Government ☐

Name: Steve Bloom
Organization (if applicable): APC Group
Your Community:
Street Address (optional): 833 MARKET ST
City/State/Zip (optional): SA CA 94103
Phone # (optional): 415-455-1786

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:



EIS/EIR ON DISPOSAL AND REUSE OF NAVAL SHIPYARD HUNTERS POINT, JULY 12, 1995
SPEAKER REGISTRATION/COMMENT CARD

PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☐ Citizen's Group ☐
Private Organization ☐ Elected Representative ☐
Federal State or Local ☐ Regulatory Agency ☐
Government ☐

Name: Willie McDowell
Organization (if applicable): KAC SHIPYARD
Your Community: Southwest
Street Address (optional): 1164 Fitzgerald Ave
City/State/Zip (optional): S.F. CA 94124
Phone # (optional): 415 822-2823

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:



EIS/EIR ON DISPOSAL AND REUSE OF NAVAL SHIPYARD HUNTERS POINT, JULY 12, 1995
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PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☐ Citizen's Group ☐
Private Organization ☒ Elected Representative ☐
Federal State or Local ☐ Regulatory Agency ☐
Government ☐

Name: Alan Hopkins
Organization (if applicable): Golden Gate Audubon Society
Your Community: San Francisco, Berkeley, Oakland
Street Address (optional): 1200 15th Ave
City/State/Zip (optional): San Francisco CA
Phone # (optional): (415) 664 0983

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:



PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☒ Citizen's Group
Private Organization ☐ Elected Representative
Federal State or Local ☐ Regulatory Agency
Government ☐

Name: RUTH GOLDSSTEIN
Organization (if applicable): Artist, Hunters Point Shipyard
Your Community: PO Box 880731
Street Address (optional): San Francisco CA 94188
City/State/Zip (optional): 415-995-2837
Phone # (optional):

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

A-53

nts:



PLEASE CHECK YOUR AFFILIATION BELOW:

Individual (no affiliation) ☒ Citizen's Group
Private Organization ☐ Elected Representative
Federal State or Local ☐ Regulatory Agency
Government ☐

Name: TANYA JOYCE
Organization (if applicable): ARTIST, HUNTERS POINT SHIPYARD
Your Community: BAYVIEW/HUNTERS POINT PORTERO
Street Address (optional): POB 884311
City/State/Zip (optional): S.F. CA 94188-4311
Phone # (optional): (415) 822-8839

DO YOU WISH TO SPEAK THIS EVENING? ☒ YES ☐ NO

If you wish to provide written comments only, please write your comments below and turn them in at this meeting. Thank you.

Comments:

I am an artist who has had a studio in the shipyard since 1984, I am glad to be at this scoping meeting. There are more artists and craftpeople at the shipyard and conversation with [redacted] [redacted] them are here today. Please do not assume that our few members represent limited interest. We will provide subsequent data.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street
San Francisco, CA 94105-3901

JUL 3 1 1995

Ms. Mary Doyle, (Code 185)
Engineering Field Activity West
Naval Facilities Engineering Command
900 Commodore Drive
San Bruno, California 94066-5006

Dear Ms. Doyle:

The Environmental Protection Agency (EPA) has received the Notice of Intent (NOI) to prepare an Environmental Impact Statement/Environmental Impact Report (EIS/EIR) for the Disposal and Reuse of the Former Naval Shipyard Hunters Point, San Francisco, California. Our review is based on the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) NEPA Implementation Regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act (CAA).

The U.S. Navy, in collaboration with the City and County of San Francisco, is preparing the EIS/EIR to analyze the environmental impacts of the disposal and proposed reuse of the former naval shipyard's property and structures. This action is pursuant to the Defense Base Closure and Realignment Act of 1990 (P.L. 101-510), which stipulates the closure of Naval Station Treasure Island and its off-station property, including the Hunters Point Annex (formerly known as Naval Shipyard Hunters Point). The approximately 500-acre facility is located along the southeast San Francisco waterfront. The property is developed with industrial ship repair facilities and includes such support facilities as recreation areas and residences.

The EIS/EIR will analyze two reuse alternatives and a no-action alternative. A preferred alternative was drafted in March 1995 by the City and County of San Francisco Planning Department, the San Francisco Redevelopment Agency and the Mayor's Citizens Advisory Committee. This alternative would include industrial, research and development, cultural and institutional, and mixed retail, residential and commercial uses. Approximately 6,500 jobs and 1,300 residential units would be created. The second alternative would be a development similar to but of a reduced scale than the preferred alternative. This alternative would

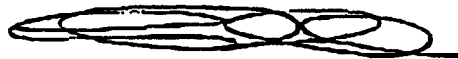
Printed on Recycled Paper

include approximately 5,000 jobs and 600 residential units. The no-action alternative would retain the former shipyard in a perpetual caretaker status as federal government property.

We encourage the Navy to include Federal, State, regional (Bay Area), County, and City agencies in the Hunters Point Annex land use and environmental planning process. Moreover, the Navy should make a concerted effort to involve community members and local environmental groups in each step of the process as well. Because of the dense urban development which characterizes most of San Francisco, the relatively large size of the Hunters Point Annex property, the sensitive ecosystems of the San Francisco Bay, and the presence of nearby residential communities (many of which are likely subject to relatively high existing environmental constraints), this action has the potential to create far-reaching effects throughout the vicinity. Consequently, the Navy should use every opportunity in the early environmental planning and review process to avoid future problems and to maximize future benefits for all stakeholders in the reuse of Hunters Point Annex.

We appreciate the opportunity to comment on the proposed project and request that three copies of the Draft EIS/EIR be sent to this office (mail code E-3) at the same time it is filed with our Washington, D.C. office. Please address the documents to my attention. If you have any questions, please contact me at (415) 744-1584 or Jeff Philliber of my staff at (415) 744-1570.

Sincerely,



David J. Farrel, Chief
Office of Federal Activities

Attachment

2489HNTR.NO

AIR QUALITY COMMENTS

1. The Draft EIS/EIR should provide information regarding the Bay Area Air Quality Management District's (BAAQMD) current air quality (attainment) status. Generation of criteria pollutants at Hunters Point Annex expected under the proposed Action should be analyzed in the context of that attainment status. The Draft EIS/EIR should include a complete examination of the following:

- existing air quality conditions, problems and planning;
- potential air quality impacts from the proposed action;
- conformity with the State Implementation Plan (SIP), if applicable;
- air quality mitigation measures; and,
- project alternatives, including alternatives that minimize air quality impacts.

Particular note should be given to the BAAQMD's recent attainment status redesignation, and how that status might be affected by the proposed disposal and reuse of the Hunter's Point Annex. Pursuant to the requirements of Section 176(c) of the Clean Air Act, 42 U.S.C. Section 7506(c), Federal agencies are prohibited from engaging in or supporting in any way an action or activity that does not conform to an applicable State implementation plan. Conformity to an implementation plan means conformity to an implementation plan's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of such standards. EPA has promulgated regulations at 58 Federal Register 63214 (November 30, 1993) implementing Section 176(c). Among other things, these regulations establish de minimis levels for actions requiring conformity determinations, exempt certain actions from conformity determinations, and create criteria and procedures that Federal agencies must follow for actions required to have conformity determinations. The Navy should review these regulations and discuss their applicability in the Draft EIS/EIR. If the Navy has any questions regarding these or other conformity requirements, please contact Bob Pallarino of the EPA Air and Toxics Division at (415) 744-1212.

WETLANDS AND WATER QUALITY RESOURCES

1. The U.S. Army Corps of Engineers should be contacted to determine the need for a Section 404 discharge permit. If a permit is required, EPA will review the proposed project for compliance with the Federal Guidelines (40 CFR 230) promulgated pursuant to Section 404(b)(1) of the Clean Water Act (CWA). In

keeping with the national goal of "no net loss" of wetlands, the Draft EIS/EIR should consider alternatives that will preserve wetland resources.

To comply with the Guidelines, the proposed project must meet all of the following criteria:

- There is no practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem (40 CFR 230.1(a)).
- The proposed project will not cause or contribute to significant degradation of waters of the United States, including wetlands (40 CFR 230.1(c)). Significant degradation includes loss of fish and wildlife habitat, including cumulative losses.
- The proposed project does not violate water quality standards, toxic effluent standards, or jeopardize the continued existence of federally listed species or their critical habitat (40 CFR 230.10(b)).
- All appropriate and practicable steps are taken to minimize adverse impacts on the aquatic ecosystem (i.e., mitigation) (40 CFR 320.10(d)). This includes incorporation of all appropriate and practicable compensation measures for avoidable losses to waters of the United States, including wetlands.

To characterize baseline conditions within the project area, the Draft EIS/EIR should include maps, text, and tables that feature areas occupied by wetlands, aquatic systems, and non-wetland riparian habitat. Direct, indirect and cumulative impacts to these resources should also be fully described in the Draft EIS/EIR.

If wetlands are affected, the Draft EIS/EIR should contain a mitigation plan that assures no net loss of wetland or riparian functions, values, and acreage. Areas that may already qualify as wetland/riparian habitat are not generally considered by EPA to be suitable for use as mitigation areas. Although encouraged by EPA, enhancement of existing wetland and riparian habitat is not in itself sufficient mitigation to meet the "no net loss" goal.

EPA SCOPING COMMENTS, NOI, DISPOSAL AND REUSE OF NAVAL SHIPYARD HUNTERS POINT,
SAN FRANCISCO, CALIFORNIA, JULY 30, 1995

2. The Draft EIS/EIR should ensure that the proposed development and reuse would not affect the Department of Defense's obligation to meet water quality standards. The Draft EIS/EIR should describe existing treatment facilities and National Pollutant Discharge Elimination System (NPDES) permits and should discuss any need for additional facilities and permits to meet the needs of the proposed project.

BIOLOGICAL RESOURCES COMMENTS

1. The Navy should conduct all necessary field surveys and consult with appropriate state and federal agencies, including the U.S. Fish and Wildlife Service, in determining the range of species that could be affected by the action, as appropriate.

2. Hunters Point Annex Naval Shipyard is in close proximity to the sensitive biological habitats of the San Francisco Bay and bay wetlands. The Draft EIS/EIR should include a description of such areas in relation to Hunters Point Annex, and determine the potential magnitude of reuse-related effects on such areas (e.g. noise, air quality, etc.).

PUBLIC SERVICES AND UTILITIES COMMENTS

1. The Draft EIS/EIR should include a survey of regional landfill capacities that are available to Hunters Point Annex Naval Shipyard, and an analysis of net increase or decrease in solid waste generation that would result from the proposed development and reuse. The impacts associated with any substantial increases in solid waste generation should be assessed in relation to available landfill capacity. Wherever possible (and through such measures as conveyance and deed language), the Navy should encourage future users of the site to incorporate source reduction, recycling and reuse elements into its development and reuse action (e.g., provide recycling depositories throughout the reuse areas, etc.). The Draft EIS/EIR should also discuss recycling options in relation to the demolition and construction materials that would result from the proposed reuse.

2. The Draft EIS/EIR should include a discussion of pollution prevention and energy conservation opportunities related to Hunters Point Annex Naval Shipyard's proposed actions. It is the EPA's position that such opportunities should be integrated into the analysis as part of the physical and economic aspects of the proposed action. The Navy should encourage future users of the site to include pollution prevention and energy conservation into project plans.

EPA SCOPING COMMENTS, NOI, DISPOSAL AND REUSE OF NAVAL SHIPYARD HUNTERS POINT,
SAN FRANCISCO, CALIFORNIA, JULY 30, 1995

3. The Draft EIS/EIR should include a survey of the regional water supplies and wastewater treatment capacity available to Hunters Point Annex and vicinity, and an analysis of the net increase or decrease in water demand and wastewater treatment demand expected as a result of the proposed development and reuse. The impacts associated with any substantial increases in such demands should be assessed with input from the appropriate regional water districts. Wherever possible (and through such measures as conveyance and deed language), the Navy should encourage future users of the site to exercise proactive water conservation measures in the development and reuse of Hunters Point Annex. Such design measures could include water-saving plumbing devices and drought-tolerant landscaping, as applicable.

4. The Draft EIS/EIR should survey the existing adequacy of police, fire, ambulance, hospital and health care services to the Hunters Point communities. Any effects on these levels that would result from the proposed action should be assessed in the Draft EIS/EIR, and mitigation should be identified as appropriate.

HAZARDOUS MATERIALS COMMENTS

1. The Draft EIS/EIR should identify Hunters Point Annex Naval Shipyard's hazardous materials storage, disposal and contamination history as relevant to the siting of future uses under the proposed action and land use plans.

2. The Draft EIS/EIR should include detailed descriptions of proposed efforts to remove hazardous waste and contamination from the site. Attention should be given to substances that can be or have been released into the adjacent aquatic and terrestrial environment. Such substances could include petroleum-based products, industrial chemicals, household chemicals, etc.

NEPA COMMENTS

1. In keeping with the Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898), the Draft EIS/EIR should describe the measures taken by the Navy to: 1) fully analyze the environmental effects of the proposed Federal action on minority communities and low-income populations, and 2) present opportunities for affected communities to provide input into the NEPA process. The intent and requirements of EO 12898 are clearly illustrated in the President's February 11, 1994 Memorandum for the Heads of all departments and Agencies.

2. The Draft EIS/EIR should include an analysis of potential cumulative effects in Hunters Point Annex's "Region of Influence" (ROI). (The ROI is the area surrounding the site that would be measurably affected by various components of the proposed action). According to 40 CFR 1508.7, "(c)umulative impacts can result from individually minor but collectively significant actions taking place over a period of time." The Draft EIS/EIR cumulative impacts analysis should include "the incremental impact of the action when added to other past, present and reasonably foreseeable future actions." A description of all planned, pending and approved projects in the ROI should be presented along with a map illustrating the locations of those projects. The incremental effects of the proposed action should then be added to other expected development effects in the region to determine cumulative impacts.

3. Mitigation is usually required to reduce or eliminate adverse environmental impacts. Therefore, it is important that the Navy describe proposed mitigation measures in the Draft EIS/EIR. These measures would then provide the basis for specific commitments carried forward to the Final EIS/EIR and the Record of Decision (ROD). The Navy should first seek to avoid adverse impacts through project design and planning. Unavoidable adverse impacts should be minimized and then mitigated through rectifying or compensatory measures. This guidance should be an integral part of the Navy planning process.

GENERAL COMMENTS

1. The Draft EIS/EIR should define significance criteria as they are applied to the impact analysis. Impacts should be clearly-stated along with their level-of-significance. Mitigation Measures should correspond to specific impacts.

2. The Draft EIS/EIR should clearly define and describe "baseline" conditions. Baseline conditions should be those conditions that exist at Hunters Point Annex immediately prior to project commencement. Positive and negative impacts should be assessed by comparing future conditions projected under the proposed Action to those baseline conditions established in the Draft EIS/EIR. Baseline conditions should be used consistently throughout the document as a basis for impacts analysis.

3. The Draft EIS/EIR should analyze noise, cultural and visual/aesthetic resources and the potential effects to these resources as a result of the proposed action.

DEPARTMENT OF TRANSPORTATION

BOX 23660
OAKLAND, CA 94623-0660
(510) 286-4444
TDD (510) 286-4454

RECEIVED

AUG 10 1995

CITY & COUNTY OFFICE
DEPT OF CITY PLANNING

August 7, 1995

SF-101-0.77
SCH# 95072085
SF101082

Ms. Barbara W. Sahm
City and County of San Francisco
Planning Department
1660 Mission Street
San Francisco, CA 94103

Dear Ms. Sahm:

RE: Notice of Preparation (NOP) for the HUNTERS POINT SHIPYARD REUSE PLAN - The proposed project is a Reuse Plan for the former Hunters Point Naval Shipyard, including educational, arts-related, cultural, retail, business services, industrial, maritime, residential and recreational/open space land uses.

Thank you for including the California State Department of Transportation (Caltrans) in the environmental review process. We have reviewed the above-referenced document and forward the following comments:

We recommend that a complete traffic study be conducted for this project and the proposed alternatives, to determine impacts on State Routes 101, 280 and all affected streets and controlling intersections. Traffic impacts should be analyzed in terms of the following:

- a) Trip generation, distribution and assignment. The methodologies used in compiling this information should be explained.
- b) Average Daily Traffic (ADT), AM and PM peak hour volumes for existing plus project, and cumulative traffic for all facilities examined. Coverage should include all traffic that would affect the facilities evaluated and it should not be limited to projects under the jurisdiction of the lead agency. Please include diagrams illustrating traffic data and a clear vicinity map showing the locations of approved and proposed projects in the State Enterprise Zone area.

- c) Mitigations that consider highway and non-highway improvements and services. Special attention should be given to the development of alternative solutions to circulation problems which do not rely on increased highway construction. For example, include methods of traffic demand management and public transit development.
- d) All mitigation measures being proposed should be fully discussed in the environmental document. Those discussions should include, but not be limited to the following areas:

Financing and scheduling
Implementation and monitoring responsibilities.

We look forward to reviewing the Draft EIR. We expect to receive a copy from the State Clearinghouse. However, to expedite the review process, you may send two copies in advance to the undersigned contact person for this agency at the following address:

Caltrans District 4
Transportation Planning
IGR/CEQA
P.O. Box 23660
Oakland, CA 94623-0660

We appreciate the opportunity to work with you on this project and wish to continue close correspondence on any new developments. Should you have any questions regarding these comments, please contact Alice Jackson of my staff at (510 286-5587).

Sincerely,

JOE BROWNE
District Director

By: 

PHILIP BADAL
District Branch Chief
IGR/CEQA

cc: Mike Chiriatti, SCH
Craig Goldblatt, MTC
Patricia Perry, ABAG

DEPARTMENT OF FISH AND GAME

POST OFFICE BOX 47

YOUNTVILLE, CALIFORNIA 94599

(707) 944-5500



July 28, 1995

City & County of S.F.
Dept. of City Planning

AUG 02 1995

OFFICE OF
ENVIRONMENTAL REVIEW

Ms. Barbara W. Sahm
San Francisco Planning Department
1660 Mission Street
San Francisco, CA 94103

Dear Ms. Sahm:

Hunters Point Shipyard Reuse Plan
Notice of Preparation (NOP); SCH #95072085

Department of Fish and Game personnel have reviewed the NOP of a Draft Environmental Impact Report (DEIR) for the proposed Hunters Point Shipyard Reuse Plan. The project is a military base reuse plan incorporating a variety of uses and 100 acres of recreation/open space. We believe the following issues need to be addressed in the DEIR.

The DEIR should address potential impacts to biotic resources and water quality, as well as alternatives which would avoid impacts and mitigation measures for unavoidable impacts. Particular attention needs to be paid to State- and Federally-listed and candidate species, ~~and candidate species whose status is~~ ~~for the project.~~ We request that subsequent documents related to this project be submitted for our review.

Specific measures to adequately mitigate unavoidable impacts need to be incorporated into project design prior to certification of the EIR. ~~The Department recommends the following overall measures to lessen or minimize impacts.~~

1. Avoidance or minimization of impacts to important plant and wildlife habitats.
2. Revegetation using native species.
3. Conformance with the Department Wetland Policy of no net loss of either wetland acreage or habitat value for unavoidable impacts.
4. Require a 100-foot setback from the edge of wetlands or riparian habitat.

The Department has direct jurisdiction under Fish and Game Code sections 1601-03 in regard to any proposed activities that would divert or obstruct the natural flow or change the bed, channel, or bank of any stream. We recommend early consultation since modification of the proposed project may be required to avoid

Ms. Barbara W. Sahm
July 28, 1995
Page Two

impacts to fish and wildlife resources. Formal notification under Fish and Game Code Section 1603 should be made after all other permits and certifications have been obtained. Work cannot be initiated until a streambed alteration agreement is executed.

The U. S. Army Corps of Engineers also has jurisdiction over the discharge of fill to streams and wetlands under Section 404 of the Clean Water Act. We recommend that the Corps be contacted to determine if they have jurisdiction and require a permit.

If you have any questions regarding our comments, please contact Jeannine M. DeWald, Associate Wildlife Biologist, at (408) 429-9252; or Carl Wilcox, Environmental Services Supervisor, at (707) 944-5525.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ken Aasen".

Ken Aasen
Regional Manager
Region 3

Brushworks

P.O.B. 884311

S.F., CA 94188-4311

July 25, 1995

City of S.F.
Dept. of City Planning

JUL 28 1995

OFFICE OF
ENVIRONMENTAL REVIEW

Dear Barbara Sahm:

Enclosed are the following additions to the developing list of shipyard flora and fauna begun at the recent scoping meeting:

- My own additions -

- ~~the [redacted] [redacted]~~ (map enclosed)

- comments on two plants -

- A) ~~The [redacted]~~ I gave you photographs is considered "extremely unusual" by two plant experts I showed photos to. I do not yet have an identification. Since much of the shipyard is technically off limits to tenants of the Point, we have yet to survey the area to find where all it may be growing.

- B) ~~The [redacted] [redacted] [redacted]~~ I mentioned to one of your colleagues is ~~[redacted]~~ on bacon and eggs (LOTUS CORNICULATUS). In Sibley Park (Oakland) the plant attracts a variety of butterflies, including blue ones.

- I have also submitted comments for two other artists I have not been able to get in touch with since the scoping meeting, but who have longstanding environmental interests they have discussed with me.

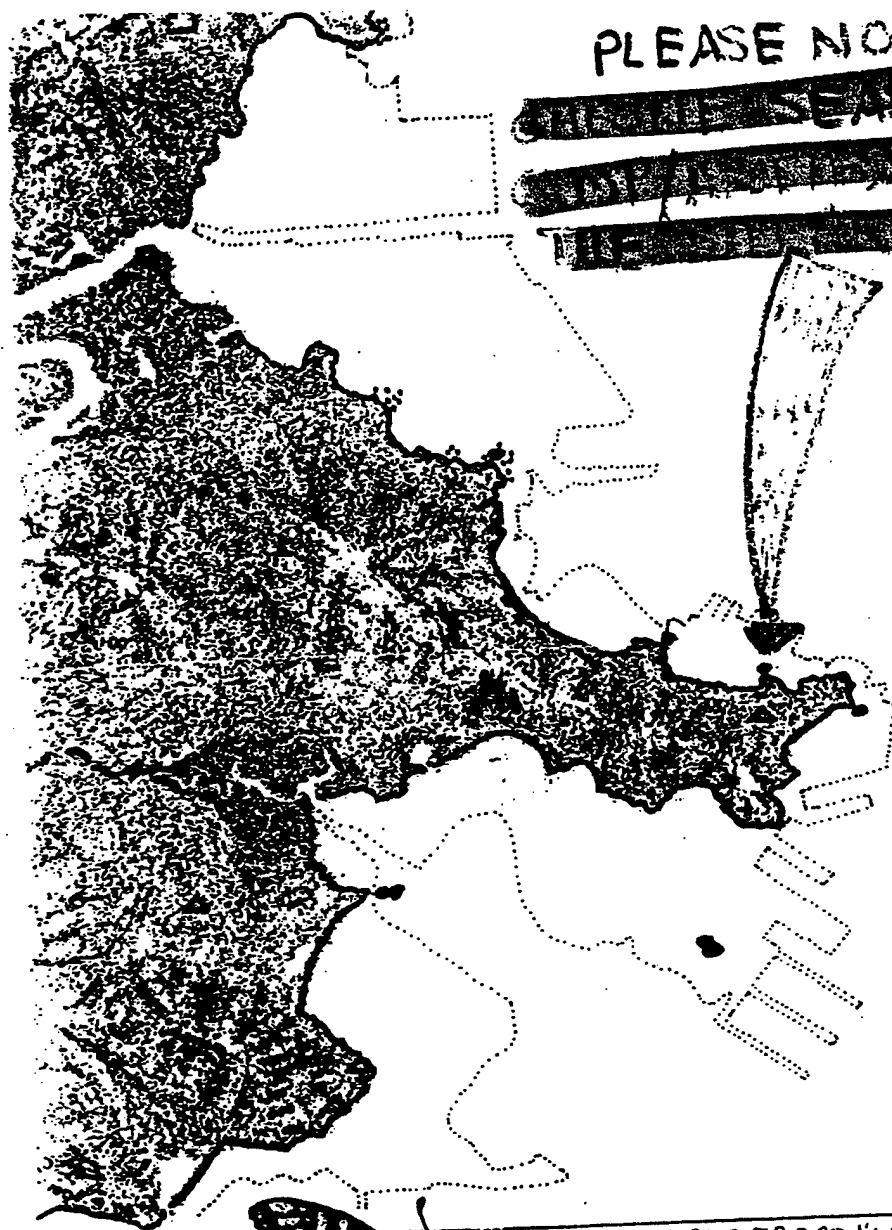
Sincerely,

Tanya Joyce

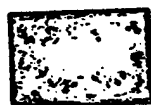
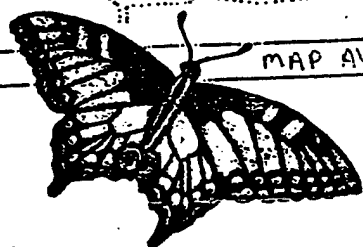
(415) 822-8839

PLEASE NOTE THE

~~SEASONAL~~
~~TOILET~~
~~THE~~



MAP AVAILABLE FROM "WILD IN THE CITY" 6 CYPRESS RD., SAN ANSELMO



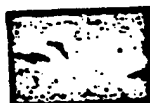
sand dune



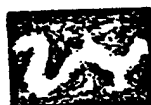
grassland



coastal scrub



freshwater creek



saltwater marsh



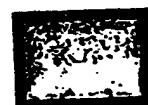
Ohlone village*



Ohlone seasonal camp/artifact



native habitat semi-protected



native habitat unprotected



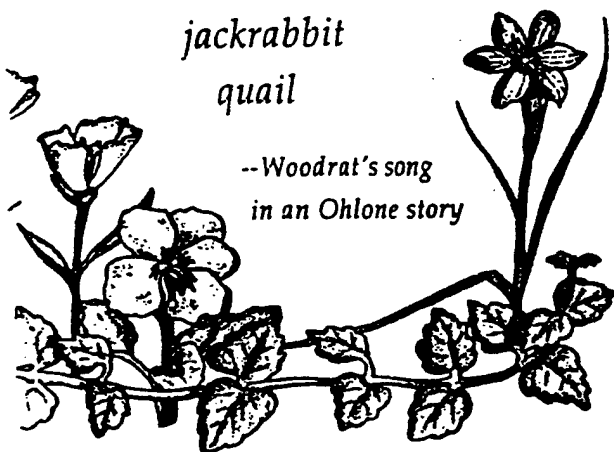
topography 100' contours

* Sites shown are now inaccessible. Many more village and camp sites were located but are not shown, either to protect their remains or because their locations are no longer known. All of this land was held sacred.

I dream jump
I you dream-of
rabbit

jackrabbit
quail

--Woodrat's song
in an Ohlone story



Planet Drum Foundation. The Ohlone song appears A-66 by of Bay Area Land Watch. The Ohlone basket and

JEFFREY LONG

~~CONFIDENTIAL~~ HUNTERS POINT SHIPYARD:

least terns
Caspian or royal terns
Western gulls
California gulls
comorants

brown pelicans
great blue herons
snowy egrets
sandpipers
willits

dowatchers
kildeers
ruddy ducks
surf scoters
wigeons

scaup
canvas backs
American coots
golden eagles
red tailed hawks
kestrels (nesting)
ravens

crows
blackbirds (nesting)
mocking birds (nesting)
brown towhees (nesting)
barn swallows (nesting)
house finches (nesting)
white crowned sparrows (nesting)
english sparrows (nesting)
robins (nesting)
starlings
mourning doves (nesting)
cedar waxwings (migrants)
bush tits
ring neck pheasant hen

~~CONFIDENTIAL~~ say:

barn owls (nesting)
screech owls
black crowned night herons

~~CONFIDENTIAL~~
sea lions
humpbacked whale
pocket gophers

~~CONFIDENTIAL~~
bicktailed jackrabbits
grey foxes
raccoons

- Also verified
- Scrub jays
- Red-winged blackbirds
- Black-crowned night herons

MTC
METROPOLITAN
TRANSPORTATION
COMMISSION

July 6, 1995

DIANNE MCKENNA, CHAIR
Association of
Bay Area Governments

JAMES SPERING, VICE CHAIR
Solano County and Cities

JANE BAKER
Cities of San Mateo County

JAMES T. BEALL JR.
Santa Clara County

SHARON BROWN
Cities of Contra Costa County

JOE BROWNE
State Business, Transportation
and Housing Agency

EDWARD R. CAMPBELL
Alameda County

WILLIAM P. DUPLISSEA
U.S. Department of Transportation

MARY GRIFFIN
San Mateo County

ELIHU HARRIS
Cities of Alameda County

TOM HSIEH
City and County of San Francisco

JEAN MCCOWN
Cities of Santa Clara County

FRED NEGRI
Napa County and Cities

JON RUBIN
San Francisco Mayor's Appointee

ANGELO J. SIRACUSA
San Francisco Bay Conservation
and Development Commission

TOM TORLAKSON
Contra Costa County

DOUG WILSON
Marin County and Cities

SHARON WRIGHT
Sonoma County and Cities

LAWRENCE D. DAHMS
Executive Director

WILLIAM F. HEIN
Deputy Executive Director

Ms. Mary Doyle
Western Division
Naval Facilities Engineering Command
900 Commodore Drive, Mail Code 185
San Bruno, California 94066-5006

Subject: Notice of Preparation (NOP), Disposal and Reuse of Hunters Point

Dear Ms. Doyle:

This letter constitutes MTC staff comments on your Notice of a draft Environmental Impact Report (DEIR) and Environmental Impact Statement (EIS) for the disposal and reuse of Hunters Point Naval Shipyard. This project consists of the utilization of existing facilities on the former Naval Shipyard to generate new jobs, new revenues and new recreational opportunities for the citizens of San Francisco. The project includes recommendations for reuse in ten distinctive land use categories, including industry, research and development, mixed use, education, cultural, future development, possible wetland restoration, residential and open space.

Civilian Seaport Reuse of a Portion of Hunters Point

Please consider civilian seaport development at Hunters Point in your preparation of the DEIR and the DEIS. Our Seaport Planning Advisory Committee approved designation of 56 acres for 3 bulk berths at Hunters Point for the Environmental Assessment now being prepared for the update of the San Francisco Bay Area Seaport Plan. We want to make sure that you will evaluate a marine terminal option in your analysis of alternatives.

Dredging

Please make sure to also consider alternatives with various levels of marine channel dredging to support future civilian marine terminal and potential shipyard requirements.

Transportation System Analysis

The EIR should identify the assumptions and methodology used for the traffic and transportation impact analysis. It should identify the population and employment projections used, as well as the transportation model used and the trip generation, distribution, modal split, and assignment equations in the model. The assumed transportation network should include only fully funded road and transit projects, even for the far-term analysis. The EIR should provide data supporting the choice of travel behavior assumptions. The assumptions should allow for a worst case analysis of traffic impacts, as required by CEQA.

The trip distribution model should take into account the projected incomes for jobs at this site, and whether the projected housing's costs are commensurate to the new job opportunities.

Please include road designations on the Draft Land Use Plan figure of the NOP. The EIR should present detailed traffic information for Interstate 280 and US 101, and Army Street, Evans Avenue, and Third Street operations along with arterial and local road analyses. This information should include volume to capacity ratios and level of service with implementation only of fully funded transportation projects.

Mitigation

Please discuss unfunded or partly funded transportation projects only as project mitigation, with potential funding sources and budgets identified. The analysis year should be 2010 or 2015, no earlier, to present a long-term view of project impacts.

Besides unfunded transportation projects, the mitigation section should look at the use of measures to reduce demand for single occupant vehicle use, including development site design to facilitate transit use as well as electronic commuting.

Thank you for the opportunity to comment on the Hunters Point Reuse Plan NOP. I look forward to receiving the DEIR/DEIS when you issue it.

Sincerely,



Marc F. Roddin
Manager
Seaport/Airport Planning

cc: Craig Goldblatt
John McCallum
Commissioner Siracusa
Jennifer Ruffolo
Barbara W. Sahm



DEPARTMENT OF THE NAVY

ENGINEERING FIELD ACTIVITY, WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CALIFORNIA 94066-5006

IN REPLY REFER TO:

5090.1B
703/EP-1376
14 NOV 1997

**SUBJECT: PUBLIC HEARING AND DRAFT ENVIRONMENTAL IMPACT
STATEMENT/ENVIRONMENTAL IMPACT REPORT FOR THE
DISPOSAL AND PROPOSED REUSE OF THE FORMER
HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA**

Hunters Point Naval Shipyard is closed, pursuant to the Defense Base Closure and Realignment Act, Public Law 101-510, as implemented by the 1993 base closure process. Under Section 2824 of Public Law 101-510, as amended, the Navy plans to convey the former Naval shipyard to the City of San Francisco for community reuse.

As part of this process, the Department of the Navy and the City and County of San Francisco Planning Department/San Francisco Redevelopment Agency have prepared a joint Draft Environmental Impact Statement/Environmental Impact Report (Draft EIS/EIR) to evaluate the potential for significant environmental effects of the Navy disposal and two proposed community reuse alternatives of the former Naval shipyard. The joint Draft EIS/EIR has been prepared pursuant to Section 102 (2) (c) of the National Environmental Policy Act (NEPA), the Council of Environmental Quality (CEQ) implementing regulations (40 CFR 1500-1508), the California Environmental Quality Act (CEQA) statutes (Public Resources Code, @ 21000 et seq.) and CEQA Guidelines (14 CCR @ 15000 et seq.).

Two identical public hearings will be held for the purpose to receive oral and written comments on the joint Draft EIS/EIR. The first will be held on Wednesday, December 10, 1997, at 5:00 p.m. in Building 101, at Hunters Point Shipyard, San Francisco. The second hearing will be held at a joint meeting of the San Francisco Planning Commission and the San Francisco Redevelopment Agency Commission on Thursday, December 11, 1997, in Room 404, War Memorial Veterans' Building, 401 Van Ness Avenue, San Francisco, at 1:30 p.m. or later (call 415-558-6422 the week of the hearing for a recorded message giving a more specific time). Any interested party may appear at the hearing and give testimony regarding the accuracy and completeness of the Draft EIS/EIR.

The proposed federal action discussed in the joint Draft EIS/EIR is the disposal of federal surplus property former Hunters Point Naval Shipyard, San Francisco, California. The document also considers the potential significant impacts of two proposed community reuse alternatives of the property, the Reuse Plan, developed by the City and County of San Francisco and the San Francisco Redevelopment Agency, and the Reduced Development alternative as well as a No Action alternative. The Proposed Reuse Plan or the Reduced Development alternative would be implemented by the Hunters Point Shipyard Redevelopment Plan and both community alternatives emphasize mixed land uses of the site, including residential, industrial, maritime industrial, cultural, institutional, research and development, and open space. The federal government would retain the property in caretaker status under the No Action alternative.

Agencies, public groups and individuals are also invited to submit written comments on the Draft EIS/EIR. Written correspondence must be received no later than January 5, 1998, and should be addressed to either:

Commanding Officer
Engineering Field Activity, West
Attn: Ms. Mary Doyle, Code 703
900 Commodore Drive
San Bruno, CA 94066-5006

and/or

Ms. Hillary E. Gitelman, Environmental Review Officer
San Francisco Planning Department
1660 Mission St. Fifth floor
San Francisco, CA 94103

Copies of the Draft EIS/EIR are being distributed to an extensive mailing list of agencies, organizations and individuals thought to have an interest in the proposed action. The Draft EIS/EIR is available for review at the following locations:

San Francisco Planning Department, 1660 Mission St, first floor, Planning Information Counter
San Francisco Main Public Library, Civic Center, Larkin & Grove Sts.
San Francisco Public Library, Anna E. Waden Branch, 5075 Third St.
San Francisco Redevelopment Agency, 770 Golden Gate Ave.

For further information concerning environmental review of the disposal and proposed reuse of the Hunters Point Naval Shipyard, contact Ms. Mary Doyle of the Department of the Navy at (650) 244-3024, FAX (650) 244-3206 or Mr. Brian J. Kalahar at the Major Environmental Analysis office of the San Francisco Planning Department at (415) 558-6359, FAX (415) 558-6426. For further information concerning the San Francisco Proposed Reuse Plan and process, contact Mr. Tom Conrad of the San Francisco Redevelopment Agency at (415) 749-2492, FAX (415) 749-2526. Thank you for your participation in this process.

John H. Kennedy
JOHN H. KENNEDY
Head, Planning SST Branch

Directions to Public Hearing at
Hunters Point Shipyard, Building 101



[Federal Register: November 21, 1997 (Volume 62, Number 225)]
[Notices]
[Page 62293]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr21no97-36]

DEPARTMENT OF DEFENSE

Department of the Navy

Notice of Public Hearing for the Joint Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) for the Disposal and Reuse of the Former **Hunters Point** Naval Shipyard, San Francisco, California

SUMMARY: Pursuant to the Council on Environmental Quality regulations (40 CFR parts 1500--1508), implementing the procedural provisions of the National Environmental Policy Act, and pursuant to the California Environmental Quality Act (Public Resources Code Section 21000, et seq.), the Department of the Navy and the City of San Francisco have prepared and filed with the U.S. Environmental Protection Agency a joint Draft Environmental Impact Statement/Environmental Impact Report (DEIS/DEIR) for the disposal and reuse of the former **Hunters Point** Naval Shipyard, San Francisco, California.

A Notice of Intent (NOI) to prepare the DEIS/DEIR was published in the Federal Register on 27 June 1995. A public scoping meeting for the proposed project was held on 12 July 1995 at Southeast Community Center, San Francisco, California.

Hunters Point Naval Shipyard is closed, pursuant to the Defense Base Closure and Realignment Act (Pub. L. 101-510) as implemented by the 1993 base closure process. Under Section 2824 of Pub. L. 101-510, as amended, the Navy plans to convey the former Naval Shipyard to the City of San Francisco. The proposed federal action involves the disposal of land, buildings and infrastructure of former **Hunters Point** Naval Shipyard for subsequent reuse. The City of San Francisco and the San Francisco Redevelopment Agency have been involved in a process to determine the reuse plans of the Naval Shipyard.

The environmental effects of two conceptual land use development alternatives (reuse alternatives) and the "No Action" alternative have been evaluated in the DEIS/DEIR. Each of the reuse alternatives describes proposed uses for approximately 935 acres of shipyard property. Proposed reuse alternatives emphasize mixed land uses including residential, industrial, maritime industrial, cultural, institutional, research and development, and open space.

No decision on the proposed action will be made until the National Environmental Policy Act process has been completed.

The DEIS/DEIR has been distributed to various federal, state and local agencies, local groups, elected official, special interest groups and individuals. The DEIS/DEIR is also available for review at the following locations:

- San Francisco Planning Department, Planning Information Center, 1660 Mission Street.
- San Francisco Main Library, Civic Center, Larkin & Grove Streets.
- San Francisco Public Library, Anna E. Waden Branch, 5075 Third Street.
- San Francisco Redevelopment Agency, 770 Golden Gate Ave.

ADDRESSES: Two public hearings will be held for the purpose to receive oral and written comment on the DEIS/DEIR. The first hearing will be held on Wednesday, December 10, 1997, at 5:00 p.m., in Building 101, at **Hunters Point** Naval Shipyard, San Francisco. The second hearing will be held at a joint meeting of the San Francisco Planning Commission and the San Francisco Redevelopment Agency Commission on Thursday, December 11, 1997, at 1:30 p.m., in Room 404, War Memorial Veterans' Building, 401 Van Ness Avenue, San Francisco. Federal, state and local agencies, and interested individuals are invited to be present or represented at the hearing. Oral comments will be heard and transcribed by a stenographer. To assure accuracy of the record, all comments should be submitted in writing. All comments, both oral and written, will become part of the public record in the study. In the interest of available time, each speaker will be asked to limit oral comments to five minutes. Longer comments should be summarized at the public hearing and submitted in writing either at the hearing or mailed to the address listed below.

FOR FURTHER INFORMATION CONTACT: Please provide written comments no later than January 5, 1998, to Ms. Mary Doyle, Engineering Field Activity West, Naval Facilities Engineering Command, 900 Commodore Drive, San Bruno, California 94066, telephone (650) 244-3024, FAX (650) 244-3206 or Mr. Brian Kalahar, City of San Francisco Planning Department, Major Environmental Analysis Office, 1660 Mission Street, San Francisco, California 94103, telephone (415) 558-6359, FAX (415) 558-6426.

Dated: November 18, 1997.

Darse E. Carndall,
LCDR, JAGC, USN, Federal Register Liaison Officer.
[FR Doc. 97-30672 Filed 11-20-97; 8:45 am]
BILLING CODE 3810-FF-P

Notice of Completion

Appendix P

See NOTE below

Mail to: State Clearinghouse, 1400 Tenth Street, Sacramento, CA 95814 916/445-0613

SCH # 95072085

Project Title: Former Naval Shipyard Hunters Point Disposal and Reuse

Lead Agency: City & County of San Francisco/San Francisco Redevelopment Agency

Contact Person: Brian J. Kalahar

Street Address: 1660 Mission Street, Fifth Floor

Phone: (415) 558-6399

City: San Francisco

Zip: 94103

County: San Francisco

Project Location

County: San Francisco

City/Nearest Community: San Francisco

Cross Streets: Jones Avenue and Donahue Street

Total Acres: 9.965

Assessor's Parcel No.: N/A (federal property)

Section: _____

Top: _____

Range: _____

Base: _____

Within 2 Miles: State Hwy #: N/A

Waterways: San Francisco Bay

Airports: N/A

Railways: Caltrain, Union Pacific

Schools: Visitacion Valley Middle School

M. J. King Jr. M. S. Martin Luther King Jr. H.

Document Type

CEQA:

☐ NOP

☐ Early Cons

☐ Neg Dec

☒ Draft EIR

☐ Supplement/Subsequent

☐ EIR (Prior SCH No.)

☐ Other

NEPA:

☐ NOI

☐ EA

☒ Draft EIS

☐ FONSI

Other:

☐ Joint Document

☐ Final Document

☐ Other

Local Action Type

☐ General Plan Update

☐ General Plan Amendment

☐ General Plan Element

☐ Community Plan

☐ Specific Plan

☐ Master Plan

☐ Planned Unit Development

☐ Site Plan

☐ Rezone

☐ Prezone

☐ Use Permit

☐ Land Division (Subdivision, Parcel Map, Tract Map, etc.)

☐ Annexation

☒ Redevelopment

☐ Coastal Permit

☐ Other

Development Type

☒ Residential: Units _____ Acres _____

☐ Office: Sq. ft. _____ Acres _____ Employees _____

☒ Commercial: Sq. ft. _____ Acres _____ Employees _____

☒ Industrial: Sq. ft. _____ Acres _____ Employees _____

☒ Educational

☒ Recreational

☐ Water Facilities: Type _____

☐ Transportation: Type _____

☐ Mining: Mineral _____

☐ Power: Type _____

☐ Waste Treatment: Type _____

☐ Hazardous Waste: Type _____

☐ Other

Project Issues Discussed in Document

☒ Aesthetic/Visual

☐ Agricultural Land

☒ Air Quality

☒ Archaeological/Historical

☒ Coastal Zone

☒ Drainage/Absorption

☒ Economic/Job

☐ Fiscal

☒ Flood Plain/Flooding

☐ Forest Land/Fire Hazard

☒ Geologic/Seismic

☐ Minerals

☐ Noise

☒ Population/Housing Balance

☒ Public Services/Facilities

☒ Recreation/Parks

☒ Schools/Universities

☐ Septic Systems

☒ Sewer Capacity

☒ Soil Erosion/Compaction/Grading

☒ Solid Waste

☒ Toxic/Hazardous

☒ Traffic/Circulation

☒ Vegetation

☒ Water Quality

☒ Water Supply/Groundwater

☒ Wetland/Riparian

☒ Wildlife

☒ Growth Inducing

☒ Landuse

☒ Cumulative Effects

☒ Other Military, energy

Environmental Justice

Present Land Use/Zoning/General Plan Use United States Naval Shipyard (closed); minor industrial uses. Federal property - no local zoning or general plan designations

Project Description The Draft Environmental Impact Statement/Environmental Impact Report evaluates the potential for significant environmental effects of U.S. Navy disposal of Hunters Point Shipyard and two proposed community reuse alternatives. The City and County of San Francisco/San Francisco Redevelopment Agency Reuse Alternative emphasizes mixed use of the site.

NOTE: Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. from a Notice of Preparation or previous draft document) please fill it in.

Revised October 1989

Reviewing Agencies Checklist

KEY

- ⊗ = Document sent by lead agency
- X = Document sent by SCH
- ✓ = Suggested distribution

☐ Resource Agency
☐ Boating & Waterways
☐ Coastal Commission
☐ Coastal Conservancy
☐ Colorado River Board
☐ Conservation
☐ Fish & Game
☐ Forestry
☐ Office of Historic Preservation
☐ Parks & Recreation
☐ Reclamation
☐ San Francisco Bay Conservation & Development Commission
☐ Water Resources (DWR)
☐ Business, Transportation & Housing
☐ Aeronautics
☐ California Highway Patrol
☐ CALTRANS District # _____
☐ Department of Transportation Planning (headquarters)
☐ Housing & Community Development
☐ Food & Agriculture
☐ Health & Welfare
☐ Health Services
☐ State & Consumer Services
☐ General Services
☐ OLA (Schools)

Environmental Affairs
☐ Air Resources Board
☐ APCD/AQMD
☐ California Waste Management Board
☐ SWRCB: Clean Water Grants
☐ SWRCB: Data Unit
☐ SWRCB: Water Quality
☐ SWRCB: Water Rights
☐ Regional WQCB # _____
 Youth & Adult Corrections
☐ Corrections
 Independent Commissions & Offices
☐ Energy Commission
☐ Native American Heritage Commission
☐ Public Utilities Commission
☐ Santa Monica Mountains Conservancy
☐ State Lands Commission
☐ Tahoe Regional Planning Agency
 Other _____

Public Review Period (to be filled in by lead agency)

Starting Date November 10, 1997

Ending Date January 5, 1998

Signature [Signature]

Date 11/10/97

Lead Agency (Complete if applicable):

Consul
 Address
 City/State
 Contact
 Phone

For SCH Use Only:

Date Received at SCH _____
 Date Review Starts _____
 Date to Agencies _____
 Date to SCH _____
 Clearance Date _____

Notes:

Planning Department
 Applicant: City & County of San Francisco
 Address: 1660 Mission Street, 5th Floor
 City/State/Zip: San Francisco
 Phone: (415) 558-6375

Revised October 1989

PUBLIC NOTICE

The Department of the Navy in association with the City and County of San Francisco announces the availability of the former Naval Shipyard Hunters Point Disposal and Reuse Draft Environment Impact Statement/Environmental Impact Report (Draft EIS/EIR) and the scheduling of a public hearing. The Draft EIS/EIR, prepared in accordance with the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), analyzes the potential environmental impacts associated with the disposal of federal surplus land at former Naval Shipyard Hunters Point. The local action evaluated is the proposed reuse of the Hunters Point property, based on the Proposed Reuse Plan described in the City and County of San Francisco's

Land Use Alternatives and Proposed Draft Plan, Hunters Point Shipyard (March 1995, as revised January 1997). An alternative reuse scenario, and a no-action alternative which would result in the federal government retaining the property are also evaluated.

Pursuant to Section 102(2) of the NEPA and, the Council of Environmental Quality Guidelines (40 CFR 1500-1508), the Navy and the City and County of San Francisco are soliciting public comments on the Draft EIS/EIR. Copies of the Draft EIS/EIR are available for review at San Francisco Planning Department, 1660 Mission Street, 1st floor, Planning Information Center, San Francisco Main Public Library, Civic Center, Larkin & Grove Streets; San Francisco Public Library, Anna E. Waden Branch, 5075 Third Street; San Francisco Redevelopment Agency, 770 Golden Gate Avenue.

A PUBLIC HEARING ON THE DRAFT EIS/EIR will be held

**Wednesday, December 10, 1997 at 5:00pm
at the following address:**

**Building 101
Hunters Point Shipyard
San Francisco, CA**

The purpose of the public hearing is to receive written and verbal comments on the former Naval Shipyard Hunters Point Draft EIS/EIR. Navy and City representatives will be at this public hearing to receive comments on the document.

Agencies and the public are encouraged to provide written comments in addition to, or in lieu of, oral comments at the public hearing. Comments should clearly describe specific issues or topics of concern. Written statements must be received no later than January 5, 1998, and should be addressed to:

**COMMANDING OFFICER
ENGINEERING FIELD ACTIVITY WEST
NAVAL FACILITIES ENGINEERING COMMAND
900 COMMODORE DRIVE
SAN BRUNO, CA 94066-5006
ATTN: MS. MARY DOYLE (Code 185)**

DRAFT EIS/EIR Distribution List
November 1997

Title	Last	First	Organization	Branch	
Elected Officials					
Attorney at Law	Katz	Leslie	Mayor of San Francisco, Appointed Public Representative	Select Committee on Base Closures	
Supervisor	Shelley Florin	Kevin Lawrance	San Francisco Board of Supervisors San Francisco Mayor's Office The Honorable Barbara Boxer The Honorable Dianne Feinstein The Honorable John Burton The Honorable Milton Marks The Honorable Nancy Pelosi The Honorable Quentin Kopp The Honorable Tom Lantos The Honorable Willie Brown		
Federal Agencies					
Commanding Officer	Klimas	Denise	Federal Aviation Administration National Oceanic & Atmospheric Administration U.S. Army Corps of Engineers U.S. Coast Guard		c/o U.S. EPA Region IX (H-1-2) Sacramento District Marine Safety Office, San Francisco Bay
	Griggs Port	Mary Patricia	U.S. Department of the Interior U.S. Department of the Interior		Bureau of Indian Affairs Office of Environmental Policy and Compliance
Director	Deason,	Dr. Jon	U.S. Department of the Interior	Office of Environmental Policy and Compliance	
Chief	Goodson	Nancy	U.S. Department of the Interior	Office of Federal Activities Federal Facilities Cleanup Office Office of Federal Activities Office of Regional Counsel Division of Ecological Services	
	Mangelsdorf	Alydda	U.S. EPA		
	Farrel	David J.	U.S. EPA (H-9-2)		
	Moyer	Bob	U.S. EPA Region IX		
	Haas	James	U.S. Fish & Wildlife Service		
Navy					
CDR	Elkins McClelland (Code 62.3)	Al Michael	Bay Area Base Transition Coordinator Engineering Field Activity West U.S. Navy U.S. Navy	Commander, Naval Base (COMNAVBASE) (Code 03) Commander-in-Chief Pacific Fleet (CINPACFLT) (Code N44)	
State Agencies					
CEQA Review Branch	Fortney	Cathrine	Bay Area Air Quality Management District	CERCLA/NRDA Unit Region 3, Coastal Region Office of Joe Browne, District Director Department of Toxic Substances Department of Toxic Substances Control	
	Delaplaine	Mark	California Air Resources Board		
	Martin	Michael	California Coastal Commission, Land Use		
	Todd	Bob	California Department of Fish & Game		
			California Department of Fish and Game		
			California Department of Parks and Recreation		
		California Department of Transportation			
		California Department of Water Resources			
	Shabahari	Cyrus	California EPA		
	Moskat	Gunther W.	California EPA		

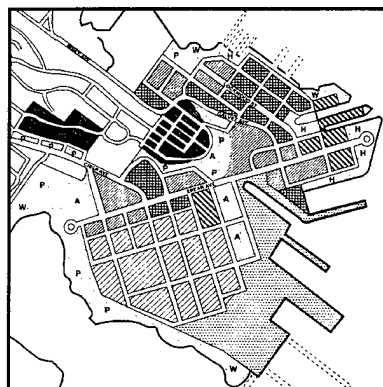
Title	Last	First	Organization	Branch
	Widell	Cherilyn	California Office of Planning and Research California State Lands Commission California State Office of Historic Preservation	State Clearing House
	Hiett	Richard	Water Quality Control Board	San Francisco Bay Region
Regional Agencies				
	Bursztynsky Ruffolo	Terry Jennifer	Association of Bay Area Governments Bay Conservation & Development Commission	Director of Environmental Services
	Brittle	Chris	Metropolitan Transportation Commission	Metro Center
City and County of San Francisco				
Capt. Manager	Olive Lord	Sue Paul	Hetch Hetchy Water & Power MUNI Service Planning Planning Department, City and County of San Francisco	Bureau of Toxics
	Sahm	Barbara W.	Planning Department, City and County of San Francisco	
	Kilstrom Lee	Keri William	Port of San Francisco San Francisco Chief Administrative Officer	
	Cooper Brownell	John Amy	San Francisco City Attorney's Office San Francisco Department of Public Health	
	Bennett Whittle Holder Lee	Rod Deborah Richard Tommy	San Francisco Fire Department San Francisco Housing Authority San Francisco Police Department San Francisco Public Works Department	
	Learner	Debra	San Francisco Recreation and Park Department	
Director	Loving Rhett deVaughn	Alan Byron Marcia	San Francisco Redevelopment Agency San Francisco Redevelopment Agency San Francisco Solid Waste Management	Bureau of Environmental Regulation and Management McLaren Lodge
General Manager	Mullane	John	San Francisco Water Department	
Organizations				
Chairperson	Hope	Linda	(HPS Artists Association) Advisory Council on Historic Preservation	Golden Gate Chapter
	Walker	Charlie	African American Truckers Association	
	Zwierlein Bloom	Irene Saul	Amah Tribal Band ARC Ecology/Arms Control Research Center	
	Feinstein Herz	Arthur Michael	Audubon Society Bay Keeper Society Bayview-Hunters Point Crime Prevention Council	
	Sowells	Darlene J.	Bayview-Hunters Point Ecumenical Council	
	Gross	Shirley	Bayview-Hunters Point Foundation Administration Offices	
	Jackson House	Espanola Ralph	Bayview Coordinating Council Bayview Hill Neighborhood Association	
	Pierce	Karen	Bayview Hunters Point Democratic Club	
	Agbabiaka	Nicholas S.	Bayview Hunters Point Homeowners and Residential Community Development Council	
	McCoy	Harold	Bayview Merchants Association	

Title	Last	First	Organization	Branch
Chair	Madison	Scott	Bayview Welfare Support Services	Yerba Buena Chapter
	King	Leroy	Businesses of Hunters Point Shipyard	
	Williams	Alfred	c/o ILWU	
	Jones	Shirley	CAC Consultant	
	Robinson	Alma	Caheed Child Care Center	
			Cal. Lawyers for the Arts	
			California Environmental Trust	
	Sigg	Jake	California Native Plant Society	
	Beeras	James	Coalition on Homelessness	
	Gendel	Neil	Consumer Action	
Chairperson	Williams	Kevin B.	Friends of Candlestick Point	Yerba Buena Chapter
	Smith	Reuben	Hunters Point Boys and Girls Club	
			Hunters Point Community Youth Park	
	Viera	Julia	Hunters Point Homeowners Association	
	Middleton	Julia	Hunters Point Recreation Center	
	Sayer	Ann Marie	Indian Canyon Mutsun Band of Costanoan	
	Kern	Douglas	Kern Mediation Group	
	Bertone	Don	Little Hollywood Improvement Association	
	Stark	Rebecca	Mariners Village Homeowners Association	
	Reid	Douglas	McKinnon Avenue Community Club	
Chairperson	Cambra	Rosemary	Moran Heights Homeowners Association	San Francisco Bay Chapter
			Muwekma Indian Tribe	
	Murray	Samuel A.	Natural Resources Defense Council	
	Govender	Manjala	New Bayview Committee	
	Kehl	Jakki	New Hp Homeowners Assoc.	
	Marquis	Kenneth	Ohlone Group	
	Orozco	Patrick	Ohlone Group	
	Yamane	Linda G.	Ohlone Group	
	Rodriguez	Ella Mae	Ohlone Group	
	Galvan	Andrew	Ohlone Group	
	Hardee	Will	Pacific Gas & Electric Company	
	Gray	Tony	Precision Transport	
	McCoy	Yvette	Progress Seven	
	Law	Sally Ann	RAND	
	Holmes	Marc	Restoring the Bay Campaign	
	Frazier	Rochele	S.F. Senior Escort Program	
	Tuiasosopo	Nofoalum	Samoan Mo Samoa	
	Lee	Sue	San Francisco Chamber of Commerce	
	Christensen	Pat	San Francisco Council of District Merchants	
	Brittan	Georgia	San Francisco for Reasonable Growth	
	Bahlman	David	San Francisco Heritage	
	Allman	Richard	San Francisco Housing & Tenants Council	
	Lucas	Lorraine	San Francisco League of Neighborhoods	
	Dutra	Louise	San Francisco Organizing Project	
	Chappel	James	San Francisco Planning and Urban Research Association	
	Nash	Andy	San Francisco Tomorrow	
	Mix, Jr.	George	San Francisco Urban League	
	Morishita	Leroy	SFSU Admin. Plan	
			Sierra Club	
			Sierra Club	
			Silk Gaudain	
	Alschuler	Karen	SMWM	
	Pitcher	Alex	South Bayshore CDC	
	Browning	Sy-Allen	South East Economic Group (SEED)	
	Brown	Bernice	Southeast Community College	

Title	Last	First	Organization	Branch
	Garlington Palega	Ethel Sulu	Southeast Community Facility Southeast Community Facility Commission Southeast Economic Development Group Union Bank West Edge Design Youth Community Developers	
	Lezama Dominski	Glen Tony		
Individuals				
	Banks Stern Thibeaux, Jr. Jones Pierce O'Neill Hardin Mackin Oertel McDaniels Bell McDowell Choy Ong Madison Sims Tui James Yamauchi McCoy Bailey Mousseaux (McLeod) Washington Ramirez Harris White Huggins Umble	Jesse Clarence Leon Joyce Karen Francis J. Heidi Edward Diana Carolyn Willie Cynthia Scott Willa Manuma Wedrell Lori Ilean Carolyn Jenny Caroline Alex Michael Gwenda Karen David		
Libraries				
	Wingerson	Kate	Government Documents San Francisco Public Library	San Francisco Main Public Library Anna E. Waden Branch
Newspapers				
Ms.	Ratcliff	Mary	Asian Week Bay City News Service Chinese News Service Chinese Times El Bohemio News International Daily News Korea Central Daily News New Bayview Newspaper Nichi Bei Times Philippine Examiner Today Potrero View Newspaper San Francisco Bay Guardian San Francisco Bay Times San Francisco Chronicle, Press Office San Francisco Examiner San Francisco Independent San Francisco Weekly The New Fillmore Newspaper The Sun Reporter The Tenderloin Times	
Mr.	King Adams Wilcox	John Gerald Linda		
	Washington	Huel		

Appendix B

Supporting Technical Information



APPENDIX B: SUPPORTING TECHNICAL INFORMATION
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Transportation, Traffic, and Circulation

Level of Service Definitions

Signalized Intersections

Table B-1 presents the signalized intersections LOS definitions. LOS A indicates free-flow conditions with short delays, while LOS indicates congested conditions with extremely long delays. LOS A, B, C, and D are considered excellent to satisfactory service levels, LOS E is undesirable, and LOS F conditions are unacceptable. Operations at signalized intersections were evaluated using the 1985 *Highway Capacity Manual* (1994 Update) operations methodology for intersection delay, outlined in Chapter 9.

TABLE B-1
Signalized Intersection Level of Service Definitions

Level of Service	Typical Delay (sec/veh)	Typical Traffic Condition
A	≤ 5.0	Insignificant Delays: No approach phase is fully utilized and no vehicle waits longer than one red indication.
B	5.1 - 15.0	Minimal Delays: An occasional approach phase is fully utilized. Drivers begin to feel restricted.
C	15.1 - 25.0	Acceptable Delays: major approach phase may become fully utilized. Most drivers feel somewhat restricted.
D	25.1 - 40.0	Tolerable Delays: Drivers may wait through more than one red indication. Queues may develop but dissipate rapidly, without excessive delays.
E	40.1 - 60.0	Significant Delays: Volumes approaching capacity. Vehicles may wait through several signal cycles and long queues of vehicles form upstream.
F	> 60.0	Excessive Delays: Represents conditions at capacity, with extremely long delays. Queues may block upstream intersections.

Sources: *Highway Capacity Manual*, Special Report No. 209, Transportation Research Board, 1985, (Updated 1994); *Interim Materials on Highway Capacity*, Circular 212, Transportation Board, 1980.

Unsignalized Intersections

A different methodology was used to analyze operations at unsignalized intersections with minor street control (i.e., a stop sign). Operations at the unsignalized intersections were evaluated using the 1985 *Highway Capacity Manual* (Updated 1994) methodology for intersection delay, outlined in Chapter 10. LOS for unsignalized intersections ranges from LOS A, which is generally free-flow conditions with easily made turns by the minor street traffic, to LOS F, which indicates very long delays for the minor street traffic. Table B-2 presents the LOS definitions for Two-Way Stop controlled intersections.

TABLE B-2
Two-Way Stop Controlled Intersection Level of Service Definitions

Level of Service	Average Total Delay (seconds/vehicle)	Typical Traffic Condition
A	0 - 5	Little or no delay.
B	5.1 - 10	Short traffic delays.
C	10.1 - 20	Average traffic delays.
D	20.1 - 30	Long traffic delays.
E	30.1 - 45	Very long traffic delays.
F	> 45	*

Source: *Highway Capacity Manual*, Special Report No. 209, Transportation Research Board, 1985, Updated 1994.

- * When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement to the intersection.

All-Way Stop controlled intersections were analyzed using the *Transportation Research Board, Circular 373* analysis methodology, which estimates the delay for each roadway approach based upon the intersection geometry and the turning movements at the intersection. The LOS is determined based upon average vehicle delay. Table B-3 presents the LOS definitions for All-Way Stop controlled intersections.

TABLE B-3
All-Way Stop Controlled Intersection Level of Service Definitions

Level of Service	Typical Delay
A	≤ 5.0
B	5.1 - 10.0
C	10.1 - 20.0
D	20.1 - 30.0
E	30.1 - 45.0
F	≥ 45.0

Source: Transportation Research Board, Circular 373.

TABLE B-4
Existing Freeway Volumes

Location	A.M. Peak Hour (8:00 to 9:00 A.M.)	P.M. Peak Hour (5:00 to 6:00 P.M.)
I-80/Bay Bridge west of Treasure Island/ Yerba Buena Island	18,400	17,420
U.S. 101 at the San Francisco/San Mateo County line	13,450	12,600
I-280 south of U.S. 101	10,850	12,250

Source: Caltrans hourly traffic counts, 1994.

TABLE B-5
Freeway Ramp Volumes

Ramp	Volumes (Veh./Hour)	
	A.M. Peak (7:00 to 9:00 A.M.)	P.M. Peak (4:00 to 6:00 P.M.)
<u>U.S. 101 Ramps:</u>		
NB off at Third St.	1,875	860
NB On an Bayshore Blvd./Third St.	620	490
SB Off at Third St.	735	715
SB On at Third St.	710	1,560
NB On at Cesar Chavez St.	460	490
SB Off at Cesar Chavez St.	750	200
<u>I-280 Ramps:</u>		
NB On at Indiana St.	1,210	1,420
SB Off at Pennsylvania Ave.	560	800
NB Off at Cesar Chavez St.	525	335

Source: Caltrans hourly traffic counts, 1992 and 1993; Korve Engineering hourly traffic counts, 1995.

TABLE B-6
Level of Service – HPS Intersections

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Delay (secs.)	LOS	Delay (secs.)	LOS
Innes Avenue / Donahue Street	Signal	0.2	A	0.2	A
Crisp Avenue / Spear Avenue	Two-Way Stop ¹	n/a	n/a	n/a	n/a
Crisp Avenue / I Street	Two-Way Stop	n/a	n/a	n/a	n/a
Galvez Avenue / Donahue Street	Two-Way Stop	3.3	A	2.9	A
Lockwood Street / Donahue Street	Two-Way Stop ²	3.5	A	3.5	A
Lockwood Street / Spear Avenue	Two-Way Stop	2.7	A	2.7	A
Galvez Avenue / Spear Avenue	All-Way Stop ³	n/a	n/a	n/a	n/a

Source: Korve Engineering, Inc., 1995.

¹ This intersection is currently an uncontrolled intersection. For analysis purposes, a Two-Way Stop controlled intersection was assumed.

² This intersection is currently a Three-Way Stop controlled intersection. For analysis purposes, an All-Way Stop controlled intersection was assumed.

³ Unsignalized intersection delay and LOS presented for minor street movement.

TABLE B-7
Level of Service – City Intersections Off HPS

Intersection	Control Type	A.M. Peak Hour		P.M. Peak Hour	
		Delay (secs.)	LOS	Delay (secs.)	LOS
Third Street / Evans Avenue	Signal	17.8	C	16.2	C
Third Street / Cargo Way	Signal	18.8	C	11.2	B
Third Street / Cesar Chavez Street	Signal	12.7	B	14.3	B
Evans Avenue / Cesar Chavez Street	Signal	24.0	C	39.4	D
Third Street / Carroll Avenue	Signal	5.9	B	5.9	B
Third Street / Gilman Avenue	Signal	11.7	B	9.7	B
Third Street / Palou Street	Signal	11.2	B	10.0	B
Jennings Street / Evans Avenue*	Two-Way Stop	6.0	B	8.0	B
Evans Avenue / Napoleon & Toland**	Signal	6.8	B	6.7	B

Source: Korve Engineering, Inc., 1995.

* Unsignalized intersection - minor street movement delay and LOS

** This intersection was recently signalized

TABLE B-8
Percent Truck Traffic at Selected Off-Site Intersections

Intersection	Approach	A.M. Peak	P.M. Peak
Third St./Palou St.	NB	6.9%	5.3%
	SB	10.6%	5.4%
	EB	12.8%	8.7%
	WB	14.7%	11.2%
	Total	9.5%	6.3%
Third St./Revere St./Bay View St.	NB	6.7%	5.3%
	SB	12.6%	7.1%
	EB	4.3%	4.5%
	EB	2.4%	0.0%
	WB	8.3%	2.1%
	Total	8.5%	5.8%
Innes Avenue/Donahue St.	NB	0.0%	6.7%
	SB	22.7%	3.6%
	EB	3.6%	4.5%
	Total	6.7%	4.3%

Source: Korve Engineering, Inc., 1995.

Earthquake Retrofit Activity On I-280

Interstate Highway 280 (I-280) is generally a north/south freeway, connecting San Francisco and San Jose. South of the interchange with U.S. 101, I-280 is a four- to six-lane freeway. The 1.5 mile (2.4 km) section of I-280 between U.S. 101 and Twenty-fifth Street was damaged in the October 1989 Loma Prieta earthquake and was closed for retrofit and reconstruction. Under 1993 conditions, this section contained one lane in each direction on the upper deck, with a temporary off-ramp connection from U.S. 101 northbound, but without the associated link to southbound U.S. 101.

The following changes were made to this section of I-280 since 1993:

- Early in 1994, the northbound U.S. 101 ramp connection to I-280 south and the northbound I-280 ramp connector to southbound U.S. 101 were closed for seismic retrofitting, and the affected traffic was temporarily diverted to the adjacent local streets.
- In the summer of 1994, two lanes on the lower deck of I-280 (northbound direction), the northbound Cesar Chavez Street off-ramp, and an additional lane on southbound I-280 were reopened.
- In December 1994, a temporary off-ramp connection from northbound U.S. 101 to northbound I-280 was opened. At the same time, a one-lane temporary connection from I-280 westbound to U.S. 101 southbound was reopened. As of mid-1995, I-280 east of U.S. 101 has three lanes in the northbound direction (two on the lower deck and one on the upper deck) and two lanes in the southbound direction (upper deck).

The I-280/U.S. 101 interchange is being seismically retrofitted with temporary ramp connections between U.S. 101 North and I-280 South, and local street detours between I-280 North and U.S. 101 South.

Regional Transportation Service

Service From the San Mateo Peninsula and Points South

San Mateo County Transit District (SamTrans): No direct service to HPS is provided by SamTrans. SamTrans is the primary public transit operator for San Mateo County. The service area stretches from northern Santa Clara County to downtown San Francisco. SamTrans provides seven routes that serve downtown San Francisco and two routes that serve the San Francisco State University on the west side of San Francisco. SamTrans provides minimal service within San Francisco along the Mission and Market street corridor. Each weekday, 5,000 to 6,000 people ride the SamTrans express buses to downtown San Francisco. SamTrans riders must transfer to San Francisco Municipal Railway #19 (southbound direction) at Eighth and Mission streets for service into HPS.

CalTrain: No direct service to HPS is provided by CalTrain. CalTrain provides commuter rail service between Santa Clara County and San Francisco. Service is operated through a joint powers arrangement with San Francisco, San Mateo, and Santa Clara Counties. The San Francisco terminal is at Fourth and Townsend streets, approximately 1.5 miles (2.4 km) from the downtown core, with service down the Peninsula to San Jose, and through service to Gilroy. CalTrain connects with MUNI local and express buses at the Fourth and Townsend station.

A CalTrain station in the South Bayshore area is two blocks west of Third Street near the intersection of Paul Avenue and Gould Street. Eight of the 29 weekday northbound trains destined for downtown San Francisco stop at the Paul Avenue station, 3 during the morning peak and 5 during the evening peak. Southbound service has 9 of the 31 trains stopping at this station, 3 during the morning peak and 6 during the evening peak. MUNI cross-town route #29 Sunset stops at the Paul Avenue station. Connection to HPS requires two additional transfers, to the #15 Third line and from that bus to the #19 at Evans.

Bay Area Rapid Transit (BART): The MUNI #19 line serves as a direct access link between HPS and the Civic Center BART station. BART provides regional transit services, connecting San Francisco with Daly City, Concord, Richmond, and Fremont. Extensions to the existing system are being constructed to the San Francisco International Airport. Approximately 123,000 riders travel to San Francisco from the East Bay each day on BART. In addition, another 69,000 West Bay riders travel solely with the Daly City/San Francisco portion of the system.

Service from East and North Bay

Alameda-Contra Costa Transit District (AC Transit): There is no direct service to HPS by AC Transit. AC Transit is the primary bus transit operator for the East Bay, including Alameda and Contra Costa counties. AC Transit operates transbay routes into the San Francisco Transbay Terminal. Most of the transbay service is designed for commuters and operates during peak periods only. However, there are 3 routes that operate 22-

hours per day and 1 route that provides 24-hour service. As of 1991, average weekday ridership for the transbay routes was 17,700.

Golden Gate Transit: There is no direct service to HPS by Golden Gate Transit. Serving riders from Marin and Sonoma Counties, Golden Gate Transit brings more than 17,000 riders to San Francisco each weekday over a system of 19 commute express and 8 local routes. Most routes serve either the Van Ness corridor/Civic Center area or the Financial District (downtown San Francisco). Major transfer points to other operators can be made at the Transbay Terminal and the Ferry Building. Local routes provide late night service to San Francisco. Golden Gate Transit also operates ferry service from the San Francisco Ferry building to two cities in Marin County—Larkspur and Sausalito. Golden Gate Transit riders would access HPS most directly by transfer from a Civic Center bound bus to the #19 at Hyde Street and Golden Gate Avenue.

Bay Area Ferries

There is no direct ferry service to HPS. Ferry service is provided between Vallejo, Alameda, Oakland, Tiburon, Larkspur, and Sausalito, and downtown San Francisco. This service is provided by the Blue and Gold fleet and Golden Gate Transit.

Impact Methodology for Transportation, Traffic and Circulation

This section presents the methodology used to determine future travel demand for the Proposed Reuse Plan and the Reduced Development Alternative. In addition, the regional and local transportation improvements for future conditions have been identified, and a regional screenline analysis provided.

Travel Demand Methodology

Land Use

The proposed land uses for HPS consist of six different land use categories!mixed use, research and development, industrial, cultural, residential, and open space. Land use data (by square footage or acreage) were provided by the San Francisco Planning Department on a block-by-block basis and were disaggregated by land use type. The transportation analysis based on projected market demand translated into building square footage and employment.

Trip Generation

Table B-9 summarizes the trip generation rates used to estimate project-generated traffic. Project trip generation was based on information obtained from various sources—the *San Francisco Guidelines for Environmental Review: Transportation Impacts*, July 1991, the *Citywide Travel Behavior Survey 1992 (CTBS2)*, the Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 5th Edition, and the *San Diego Traffic Generators*. In addition, due to the mixed-use nature of the Proposed Reuse Plan, some people would visit more than one destination during their trip at the site. These trips are considered linked-trips.

The mixed-use trip generation rate was a composite rate derived from various rates available in the *San Francisco Guidelines*, such as general convenience, showrooms,

service, and distribution. Although the residential trip generation rate was obtained from the *San Francisco Guidelines*, only a P.M. peak hour rate was available. To derive an A.M. peak hour trip generation rate for residential uses, a relationship between A.M. and P.M. peak hour rates was developed based on rates published in the *San Diego Traffic Generators*.

The trip generation rates presented in Table B-9 represent both worker and visitor trips for each land use category. To determine the percentage of workers versus visitors, work/non-work splits were obtained from the *San Francisco Guidelines*. Directional percentages were also obtained from the *San Francisco Guidelines* to estimate the number of inbound and outbound trips that would be generated by the Proposed Reuse Plan and the Reduced Development Alternative.

TABLE B-9
Trip Generation Rates

Land Use	Daily (trips/1,000 gsf)	A.M. Peak (trips/1,000 gsf)	P.M. Peak (trips/1,000 gsf)
Mixed-Use	45.50	2.03	2.03
Research & Development ⁵	$\text{Ln}(T)=0.799\text{Ln}(X)+3$.238	$\text{Ln}(T)=0.866\text{Ln}(X)+0.924$	$\text{Ln}(T)=0.821\text{Ln}(X)+1.118$
Industrial	$T=4.949(X)+7.65.587$	$\text{Ln}(T)=0.818\text{Ln}(X)+0.916$	$T=1/[(1.027/X)+0.00064]$
Cultural ⁶			
Museum:	50.00	0.00	9.60
Small Performing	42.00	0.00	4.60
Arts:	15.20	0.00	3.70
Service:			
Educational	12.87	2.21	1.06
Residential ⁷	7.50	1.04	1.30
Open Space ⁸			
Active:	50.00	2.00	4.00
Passive:	20.00	0.80	1.60
Hard Surface:	20.00	0.80	1.60

Source: Korve Engineering, Inc., 1995.

Table B-10 presents a comparison of the A.M. and P.M. peak hour person-trip generation proposed by travel mode for the Proposed Reuse Plan and the Reduced Development Alternative for 2010 and 2025. To estimate the number of transit and "other" trips ("other" mode includes taxi, limousine, tour bus, bicycle, motorcycle, and walk), appropriate mode split percentages were derived from the Year 2010 MTC regional travel demand model for the South Bayshore District, with adjustments to reflect recommended transit services to HPS. As shown in Table B-10, the Proposed Reuse Plan

⁴ gsf = gross square feet

⁵ ITE, Trip Generation Manual, formulas, where Ln = Logarithmic equation, T = trips, X = per 1,000 sq. ft. (92.9 sq. m).

⁶ Assume that cultural land uses are generally closed during the A.M. peak period.

⁷ Residential trip rates expressed in trips per dwelling unit.

⁸ Open Space trip rates expressed in trips per acre.

is estimated to generate approximately 5,480 person-trips during the A.M. peak hour and 6,180 person-trips during the P.M. peak hour by 2025 build-out conditions. In comparison to the Proposed Reuse Plan, it is estimated that the Reduced Development Alternative would generate approximately 3,340 fewer person-trips during the A.M. peak hour and 3,550 fewer person-trips during the P.M. peak hour by 2025.

TABLE B-10
Project Person-Trip Generation

Scenario	A.M. Peak Hour				P.M. Peak Hour			
	Vehicle-Person Trips ⁹	Transit Trips	Other Trips ¹⁰	Total Person-Trips	Vehicle-Person Trips ⁹	Transit Trips	Other Trips ¹⁰	Total Person-Trips
Proposed Reuse Plan:								
Year 2010	2,355	655	495	3,505	2,640	760	520	3,920
Year 2025	3,610	900	865	5,375	4,055	1,050	950	6,055
Reduced Development Alternative:								
Year 2010	880	220	220	1,320	1,000	250	240	1,490
Year 2025	1,430	320	390	2,140	1,750	390	490	2,630

Source: Korve Engineering, Inc., 1995.

Table B-11 summarizes the estimated A.M. peak hour (8 to 9 A.M.) and P.M. peak hour (5 to 6 P.M.) vehicle-trip generation (including autos and trucks) for the Proposed Reuse Plan and the Reduced Development Alternative. These estimates of the number of project-generated auto trips were based on auto percentages and vehicle occupancy rates (VORS) obtained from the City Planning Department.

TABLE B-11
Project Vehicle-Trip Generation

Scenario	A.M. Peak Hour		P.M. Peak Hour	
	Autos	Trucks	Autos	Trucks
Proposed Reuse Plan:				
Year 2010	1,395	80	1,630	50
Year 2025	2,090	180	2,450	110
Reduced Development Alternative:				
Year 2010	510	40	600	20
Year 2025	810	80	1,020	50

Source: Korve Engineering, Inc., 1995.

Trip Linkages

Due to the mixed-use nature of the Proposed Reuse Plan, most people would visit more than one destination during their trip at the site. These trips are considered linked-trips.

⁹ Vehicle-person trips are defined as the number of persons using automobile, carpool, and vanpool.

¹⁰ "Other" mode includes taxi, limousine, tour bus, bicycle, motorcycle, and walking.

For example, a visitor to a museum may also visit the retail uses at HPS before driving home. To account for these linked-trips, a 25 percent reduction was applied to the mixed-use and cultural land use rates presented in Table B-9. Studies have shown that the percentage of trips in a mixed-use linked development has a strong relationship to the percentage of commercial land uses within the area. Since there is a significant amount of commercial use identified in the Proposed Reuse Plan, the 25 percent reduction is appropriate.

Trip Distribution and Assignment

Table B-12 presents the trip distribution patterns assumed for the proposed project. Project trip distribution was derived from information obtained from the *Citywide Travel Behavior Survey (CTBS)* for Superdistrict 3 (Figure B-1). As shown in Table B-12, approximately 75 percent of the project trips destined to Superdistrict 3 travel from within San Francisco and the remaining 25 percent travel from the regions outside San Francisco. These distribution patterns were used as the basis for assigning the project trips to local streets in the study area. For the convenience of the local traffic impact model, project traffic was assigned to only major streets. Specific percentages were developed based on the appropriate travel times to HPS. In general, it was estimated that approximately 80 percent of the project traffic would access HPS via the North Gate, while the remaining 20 percent would use the South Gate.

TABLE B-12
Project Trip Distribution

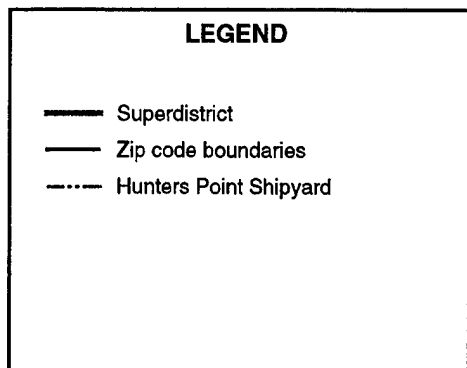
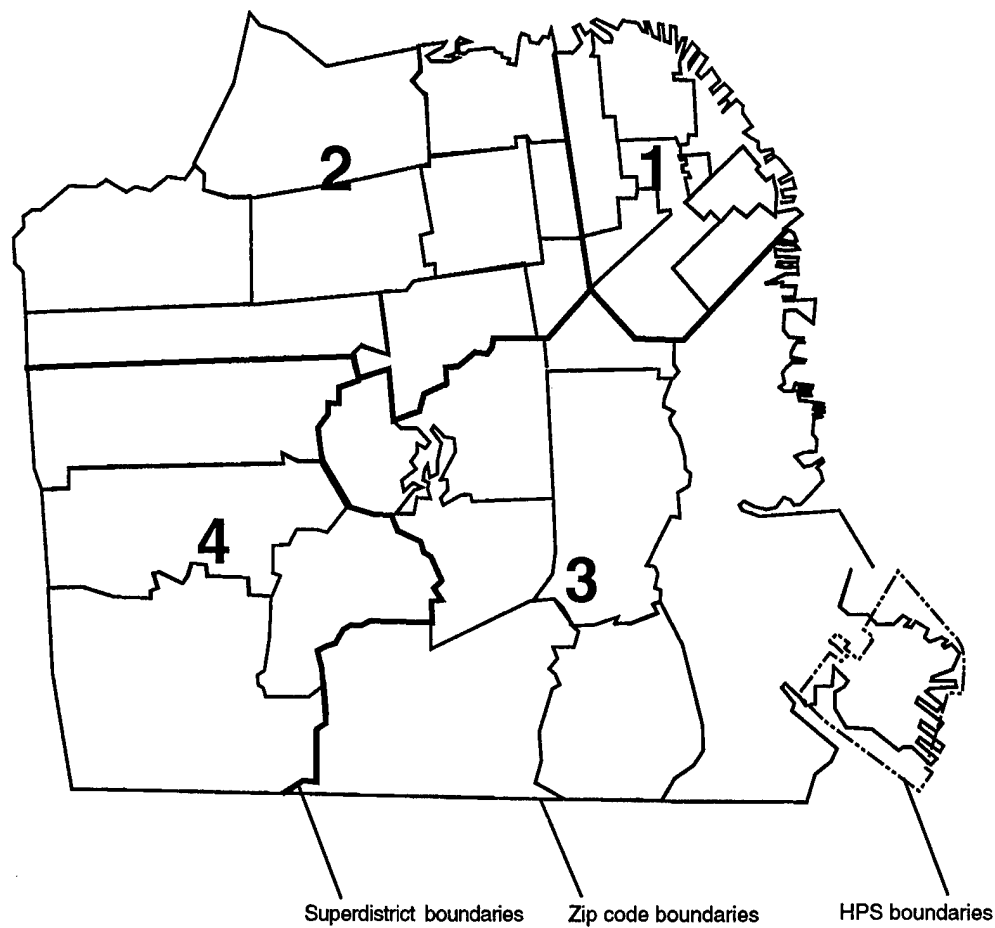
Place of Residence	Percentage
San Francisco	74.4%
Superdistrict 1:	8.2%
Superdistrict 2:	10.2%
Superdistrict 3:	50.0%
Superdistrict 4:	6.0%
East Bay	7.8%
North Bay	2.7%
South Bay	15.1%

Source: *Citywide Travel Behavior Survey*, Korve Engineering, Inc., 1995.

The MTC information was compared with the trip distribution patterns projected by the Year 2010 MTC regional travel demand model for the South Bayshore area. It was determined that the trip distribution patterns projected from the MTC model compare closely with the travel patterns derived from *CTBS* data. As such, the trip distribution patterns from the *CTBS* information were used in the transportation analysis.

Modal Split

Modal split information was derived from the Year 2010 MTC regional travel demand model for the South Bayshore area, with adjustments to reflect potential increase in transit services in the area. The *CTBS* mode split data for Superdistrict 3 were reviewed.



Source: City and County of San Francisco, 1993b.

Figure B-1: San Francisco Superdistrict Boundaries

Since Superdistrict 3 includes many districts, such as South Bayshore, Potrero Hill, Mission, Eureka Valley, Glen Park, and Diamond Heights, the mode split data is greatly influenced by the transit ridership in the Mission Street corridor and, to a lesser extent, the Church and Market Street corridors. As such, modal split information directly taken from the CTBS would represent an overestimation of transit mode split for HPS.

Due to the regional aspect of the MTC travel demand model, the model does not specifically disaggregate HPS from the South Bayshore area. Furthermore, the MTC model assumes lower intensity development in the HPS area, and, therefore, potential increases in transit service to the site were not assumed in the model. As such, modal split information taken directly from the model would tend to underestimate transit capacity and ridership to HPS. To obtain a more realistic transit mode split percentage, data obtained from the Year 2010 MTC regional travel demand model was used as a basis. However, an adjustment factor was developed by modifying the out-of-vehicle travel times to reflect the potential improved total travel times, and modifications were made to the mode choice variables to account for changes in transit service (e.g., decrease in transit headways).

Table B-13 summarizes the mode split percentages obtained from the MTC travel demand model, while Table B-14 summarizes the mode split percentages used in the transportation analysis. The MTC home-based trip tables represent the "worker" percentages and the MTC non-home based work (i.e., non-home based, home-recreation, and home-shopping) trip tables represent the "non-worker" percentages. As shown in Table B-14, different mode choice percentages were used for workers and non-workers, since workers have different travel characteristics than non-workers visiting the project site. Mode choice percentages also vary between land use categories.

Earthquake Adjustment

The Loma Prieta Earthquake in October 1989 resulted in the closure of I-280 between U.S. 101 and the Mariposa ramps. Under 1993 conditions, this section of I-280 contained one lane in each direction on the upper deck, with a temporary off-ramp connection from U.S. 101 northbound, but without the associated link to southbound U.S. 101. The resulting changes to traffic circulation in the area caused shifts in traffic from the freeways to the Third Street corridor. As of mid-1995, I-280 east of U.S. 101 has three lanes in the northbound direction (two on the lower deck and one on the upper deck), and one lane in the southbound direction. For purposes of the transportation impact analyses, existing intersection turning movement count data (collected in November 1993 and November 1994) were adjusted to reflect the pre-earthquake conditions before future traffic growth rates were applied.

TABLE B-13
MTC Travel Demand Mode Split Percentages

Direction	Home-Based Work		Non-Home Based Work	
	Auto	Transit	Auto	Transit
Non-Residential (Inbound)	89.7%	10.3%	91.5%	4.9%
Residential (Outbound)	74.2%	25.8%	85.2%	14.8%

Source: MTC Travel Demand Model, Korve Engineering, Inc., 1995.

TABLE B-14
Traffic Analysis Mode Split Percentages

Land Use	Worker			Non-Worker		
	Auto	Transit	Other	Auto	Transit	Other
Mixed-Use	72.7%	12.9%	14.3%	63.3%	11.6%	25.0%
R&D	72.7%	12.9%	14.3%	64.0%	11.6%	24.4%
Industrial	72.7%	12.9%	14.3%	64.0%	11.6%	24.4%
Cultural	72.7%	12.9%	14.3%	64.0%	11.6%	24.4%
Residential	58.6%	31.2%	10.2%	77.0%	17.0%	6.0%
Open Space	72.7%	12.9%	14.3%	63.3%	11.6%	25.0%

Source: MTC Travel Demand Model, *Citywide Travel Behavior Survey*, Korve Engineering, Inc., 1995.

Traffic count data under pre- and post-earthquake conditions at various locations within the study were obtained from the San Francisco Department of Parking and Traffic. Roadways included Third Street, Cesar Chavez Street, Evans Avenue, Bayshore Boulevard, Oakdale Avenue, and Palou Avenue. Table B-15 summarizes the changes in traffic volumes between pre-earthquake and post-earthquake conditions. These percentages were used to derive adjustment factors that were then applied to post-earthquake conditions to develop pre-earthquake traffic volumes.

TABLE B-15
Earthquake Adjustments

Roadway	Direction	A.M. Peak Hour Adjustment	P.M. Peak Hour Adjustment
Third Street	Northbound	92%	32%
	Southbound	8%	78%
Cesar Chavez Street	Eastbound	10%	42%
	Westbound	15%	38%
Evans Avenue	Eastbound	-24%	-23%
	Westbound	23%	-3%

Source: Korve Engineering, Inc., 1995.

Background Traffic Growth

Future background traffic growth was developed using the 1990 and 2010 MTC regional travel demand model (MTCFAST-80/81). The model is based on forecasts of regional growth prepared by ABAG. The MTC travel model is composed of 721 Travel Analysis Zones (TAZ) for the nine-county San Francisco Bay Region. The TAZ is the basic geographic unit of a travel demand model system. Specific TAZs in the HPS vicinity are shown on Figure B-2.

The 2010 growth rate was developed by comparing the two MTC model scenarios to determine total growth between 1990 and 2010. This resultant growth (approximately 23 percent) was annualized and applied to the adjusted existing count data (pre-earthquake conditions) to derive 2010 traffic volumes. The 2025 growth rate was derived from a similar method, assuming a straight-line growth rate between 1990 and 2025. The total growth between 1993 and 2025 was determined to be approximately 47 percent. After applying the adjustments to the existing count data to represent pre-earthquake conditions, the background growth percentages were then applied to these adjusted volumes to obtain future background traffic levels.

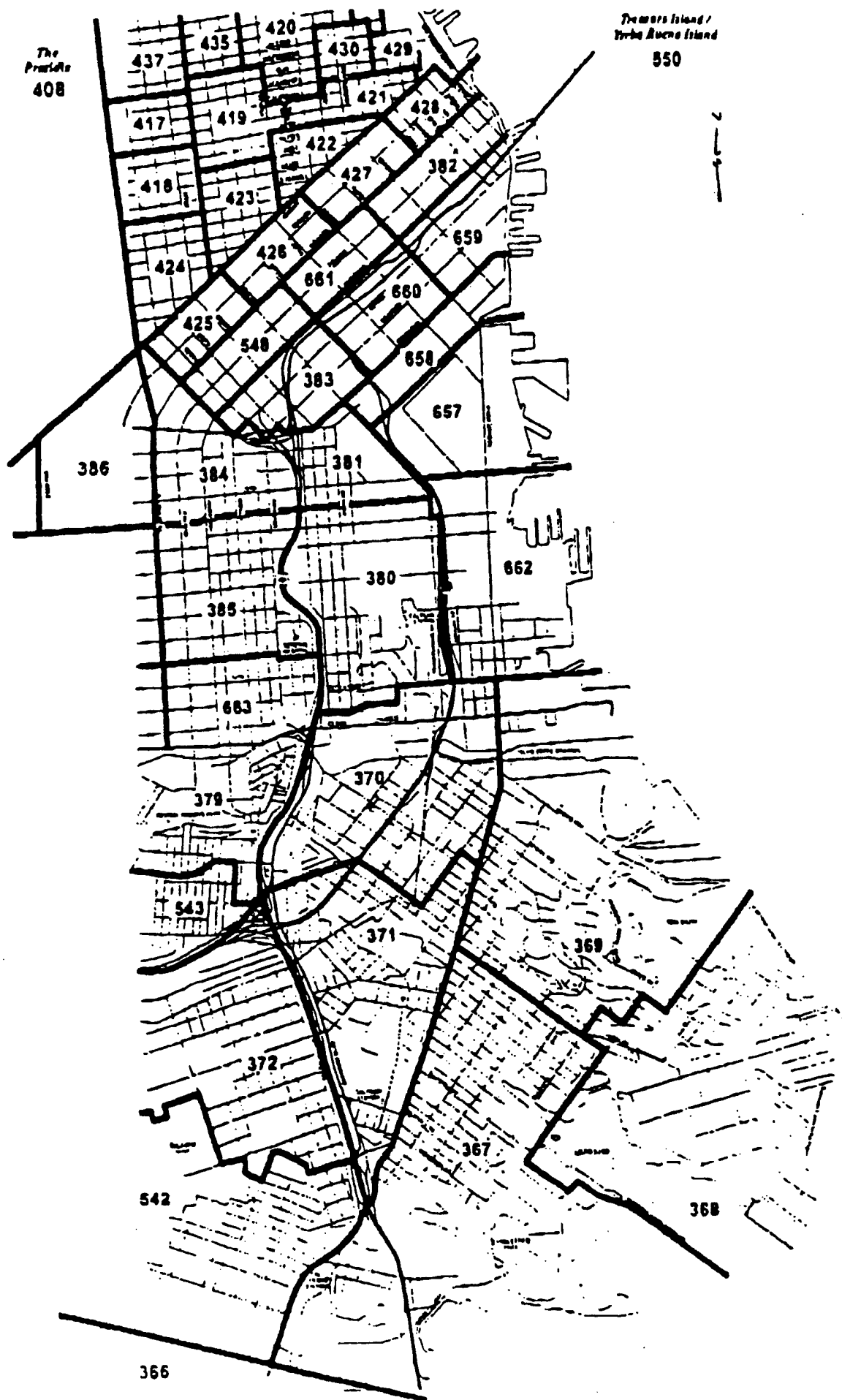
Regional and Local Transportation Improvements

The transportation facilities and services assumed to exist by 2010 and 2025 include those identified in the Regional Transportation Plan (RTP) for the nine-county San Francisco Bay Area, as identified by MTC. Specific assumptions in the vicinity of HPS include:

- The traffic analysis assumes that the earthquake retrofit on I-280 and its interchanges with U.S. 101 will be completed by 2010. No additional highway capacity is assumed to be provided to San Francisco.
- The RTP includes upgrades to the CalTrain system, but specific projects have not yet been identified. No substantial increase in transit service was assumed to be provided for future years.
- The transportation analysis assumes that some improvements on Cesar Chavez Street (formerly Army Street) will be completed by 2010. The Department of Parking and Traffic's Phase I improvements for Cesar Chavez Street include widening Cesar Chavez Street from four to six lanes between Pennsylvania Avenue and Third Street.

Regional Screenline Analysis

This section presents the methodology used in the screenline analysis for the regional freeway facilities. The analysis approach is presented first, followed by the methodology used to estimate future year conditions on the freeway screenlines.



Screenline Analysis

Persons traveling to and from HPS would use the regional freeway and bridge facilities that are found outside the study area, and would be part of the background growth in travel between San Francisco and other counties in the Bay Area. The analysis of the regional freeway and bridges was conducted using a screenline analysis.

A screenline is used to describe the magnitude of travel to/from San Francisco and to compare estimated travel demand with the capacities for a travel mode. Screenlines are hypothetical lines that would be crossed by persons traveling between San Francisco and other parts of the region. They are the measurement points for the freeway travel projects presented in the analysis.

In the screenline analysis, traffic volumes are compared with the general capacity to determine the v/c ratio. A v/c ratio is the volume of vehicles on a particular roadway divided by the available capacity of the roadway. The v/c ratio is a measure of capacity sufficiency, and a good indication of whether there is excess capacity on the facility to accommodate future traffic growth, or if improvements are needed to increase capacity or modify travel demand. A roadway operating at a v/c ratio of 1.00 is considered at capacity. A v/c ratio less than 1.00 indicates excess capacity.

Screenline Locations

For the HPS analysis, three screenline locations were evaluated:

- U.S. 101 at the San Mateo county line
- I-280 south of U.S.101
- I-80/Oakland Bay Bridge

Existing Conditions

Traffic volumes on the three regional screenlines were obtained from Caltrans to determine the traffic volumes on the freeway facilities that would be used to access HPS. Traffic volumes at U.S. 101 and I-280 screenline locations were obtained from Caltrans July 1993 and August 1993 data, respectively. Traffic volumes at the I-80/U.S. 101 Bay Bridge were obtained from the *Alternative to Replacement of the Embarcadero Freeway and Terminal Separator Structure DEIS/DEIS*, dated August 1995.

Future Year 2010 and 2025 Conditions

The regional MTC travel demand model was used to identify background traffic growth in the region for 2010 and 2025 conditions. The MTC model is based on forecasts of regional growth prepared by ABAG. Growth factors for future traffic conditions were developed by comparing the MTC travel demand output for 1990 and 2010. This resultant growth was annualized and applied to existing count data to derive 2010 traffic volumes. The 2025 growth rate was derived from a similar method, assuming a straight-line output between 1990 and 2025.

For U.S. 101 and I-280 screenlines and freeway ramps, total growth between existing conditions and 2010 was determined to be approximately 3 percent, while total growth to 2025 conditions was about 5 percent. These percentages were applied to existing volumes to estimate future cumulative traffic volumes at the regional screenlines.

Growth rates on the I-80/Oakland-Bay Bridge screenlines were based on the analysis presented in the *DEIS/DEIS for the Alternative to Replacement of the Embarcadero-Freeway and Terminal Separator Structure*, August 1995. The travel demand estimates included in that analysis were also based on the regional MTC travel demand model. The resultant percentages were added to the existing traffic volumes at the I-80/Bay Bridge to determine the future cumulative traffic volumes at this location.

In general, total growth between existing conditions and 2010 ranged from 6 to 23 percent. During the A.M. peak hour, Bay Bridge traffic is anticipated to increase by 23 percent and 6 percent in the eastbound and westbound directions, respectively. During the P.M. peak hour, traffic volumes are anticipated to increase by 8.5 percent and 13.5 percent in the eastbound and westbound directions, respectively.

Traffic growth between existing conditions and 2025 conditions is anticipated to increase over 2010 conditions. During the A.M. peak hour, Bay Bridge traffic is anticipated to increase by 45 percent and 6 percent in the eastbound and westbound directions, respectively. During the P.M. peak hour, traffic volumes are anticipated to increase by 17 percent and 27 percent in the eastbound and westbound directions, respectively.

Technical Memorandum Cumulative Transportation Impact Analysis

The purpose of this technical memorandum is to analyze consistency between the Hunters Point Shipyard (HPS) EIS/EIR transportation analysis and three other major San Francisco projects undergoing environmental analyses in 1998. This memorandum serves as supporting technical material to EIS/EIR Section 4.1, Transportation, Traffic, and Circulation. The other three projects are:

- Mission Bay Subsequent EIR (DSEIR published April 11, 1998).
- Third Street Light Rail Transit (LRT) Project EIS/EIR (DEIS/EIR published April 3, 1998).
- Candlestick Point Stadium and Retail/Entertainment Center (on-going analysis).

The HPS EIS/EIR effort started in 1995. Following initiation of the HPS project, three other major environmental documents started: the Mission Bay Subsequent EIR in January 1997; the Third Street Light Rail Project DEIS/EIR in August 1996; and the Candlestick Point Stadium and Retail/Entertainment Center analysis in June 1997.

For these three 1997 analyses, 2015 was established as the future year for the cumulative transportation impact analysis methodology, compared to 2010 used in the HPS EIS/EIR. This cumulative impact analysis methodology for the other three projects included the following steps:

1. ABAG Projections '96 data were adjusted to specifically include several major new development proposals, such as the Treasure Island, HPS, and Mid-Market projects, to establish the cumulative baseline conditions (herein referred to as "Adjusted ABAG Projections '96").
2. The proposed land use data for the Mission Bay and Candlestick Point Retail/Entertainment Center projects were manually added to the cumulative baseline.
3. The MTC regional travel demand model was updated to include revised San Francisco growth forecasts.

For comparison purposes, the data listed below were obtained from the transportation analyses for the three projects (where applicable):

- Socioeconomic/land use input
- Roadway traffic volumes
- Intersection and freeway LOS
- Percent of traffic contributed by the HPS project at selected intersections

In addition, the implication of the following two conditions was also assessed.

- Traffic operations during the Candlestick Point Stadium and Retail/Entertainment Center project construction period.
- Traffic implications of the proposed Yosemite Slough bridge.

Socioeconomic/Land Use Inputs

Land use assumptions are the basis for future cumulative travel demand analysis and traffic impact analysis. Table B-16 presents a comparison of land use data used in each document. The HPS EIS/EIR and the other three environmental analyses used comparable databases. As shown in the table, the major difference in the land use data is the use of ABAG Projections '94 in the HPS EIS/EIR and the use of the Adjusted ABAG Projections '96 by the other three projects.

Table B-16
Comparison of Land Use Data for Future Cumulative Conditions

<i>Project</i>	<i>Hunters Point EIS/EIR</i>	<i>Mission Bay Subsequent EIR</i>	<i>Third Street Light Rail Project DEIS/EIR</i>	<i>Candlestick Point Stadium and Retail/ Entertainment Center Analysis (on-going)</i>
Hunters Point Reuse Plan	Specifically considered	Included in the Adjusted ABAG Projections '96	Included in the Adjusted ABAG Projections '96	Included in the Adjusted ABAG Projections '96
Mission Bay Plan	Included in ABAG Projections '94 (Old Mission Bay Plan)	Specifically considered	Included in the Adjusted ABAG Projections '96	Included in the Adjusted ABAG Projections '96
Candlestick Point Stadium and Retail/Entertainment Center Project	Not explicitly included in Projections '94	included in the Adjusted ABAG Projections '96	Included in the Adjusted ABAG Projections '96	Specifically considered
Background Growth	Included in ABAG Projections '94	Included in the Adjusted ABAG Projections '96	Included in the Adjusted ABAG Projections '96	Included in the Adjusted ABAG Projections '96

Table B-17 presents a comparison of ABAG Projections '94, ABAG Projections '96, and Adjusted ABAG Projections '96. As shown in the table, the HPS EIS/EIR assumed a Citywide total population of 819,000 and employment of 667,570 in 2010. The other three analyses used the Adjusted ABAG Projections '96, which included a Citywide total population of 819,942 and employment of 665,400 in 2015. While the HPS EIS/EIR did

not use the same socioeconomic and land use database as the other three analyses, the difference in total population and employment between the HPS EIS/EIR and the other three analyses is not substantial (i.e., about 942 [0.115 percent] fewer persons and 2,170 [0.325 percent] more jobs). This magnitude of difference is negligible, when considered in the context of total Citywide housing and employment data. However, this difference could be noticeable at the local level, especially if the growth is concentrated in a small geographic area. Therefore, a comparison of local traffic volumes projected in these analysis is warranted.

Table B-17
Comparison of ABAG Projections

Region	ABAG Projections '94		ABAG Projections '96		Adjusted ABAG Projections '96	
	2010 Population	2010 Employment	2015 Population	2015 Employment	2015 Population	2015 Employment
Total San Francisco	819,000	667,570	795,800	638,670	819,942	665,400

Roadway Traffic Volumes

Table B-18 compares future cumulative traffic volumes for key roadway segments near these major developments. The Mission Bay Subsequent EIR traffic analysis does not include an analysis of intersections along Third Street south of Mariposa Street. Therefore, no comparison with the Mission Bay project is provided.

Table B-18
Comparison of Roadway Traffic Volumes for Future Cumulative Conditions Weekday P.M. Peak Hour

Roadway Segment	Hunters Point EIS/EIR (2010)	Third Street Light Rail Project DEIS/EIR (2015)	On-going Candlestick Point Stadium and Retail/Entertainment Center Analysis (2015)
Third Street, north of Evans Avenue	1,256	1,084	1,259
Third Street, south of Evans Avenue	1,248	1,091	1,129

The Candlestick Point Stadium and Retail/Entertainment Center project would add approximately 8 percent of its total traffic to Third Street, with about 80 percent using Harney Way for access, due to its direct access to U.S. 101, and the remaining 12 percent using other east-west streets for access. The above comparison shows that the HPS

EIS/EIR analysis is conservative in that it assumes a higher volume on Third Street in 2010 than either of the other analyses assumed for 2015.

Intersection and Freeway Operating Conditions

Intersection LOS

Figure B-3 illustrates the locations of the HPS project site and the intersections analyzed by the Third Street Light Rail Project DEIS/EIR and the on-going traffic analysis for the Candlestick Point Stadium and Retail/Entertainment Center project.

Table B-19 presents the results of future cumulative P.M. peak hour LOS for key intersections along Third Street from the HPS, Third Street LRT, and Candlestick Point projects. The table shows that LOS for the Third Street intersections are comparable. The only exception is the Third Street/Cesar Chavez intersection, which shows LOS C in the HPS EIS/EIR and LOS F in the other two documents. The reason for this discrepancy is that the HPS EIS/EIR did not originally account for the reduction in the number of traffic lanes on Third Street proposed by the Third Street LRT project. Section 4.1 of this EIS/EIR has been revised to reflect this proposed reduction of travel lanes, so that under cumulative traffic conditions, the Third Street/Cesar Chavez intersection operates at LOS F.

Table B-19
Comparison of Intersection LOS for Future Projects
Weekday P.M. Peak Hour

<i>Intersection</i>	<i>Hunters Point EIS/EIR (2010)</i>	<i>Third Street LRT Extension EIR (2015)</i>	<i>On-going Candlestick Point Stadium and Retail/ Entertainment Center Analysis (2015)¹</i>
Third Street/Cesar Chavez	C ²	F	F
Third Street/Cargo Avenue	B	B	-
Third Street/Evans Avenue	F	E	E
Third Street/Palou Avenue	B	B	-
Third Street/Carroll Avenue	B	B	B
Third Street/Gilman Avenue	B	B	C

Notes:

- ¹ Candlestick Point Stadium and Retail/Entertainment Center analysis is provided for non-game day conditions.
- ² Hunters Point EIS/EIR did not assume the reduction of travel lanes from the proposed Third Street LRT Extension project. If this had been considered, this intersection would have been LOS F.

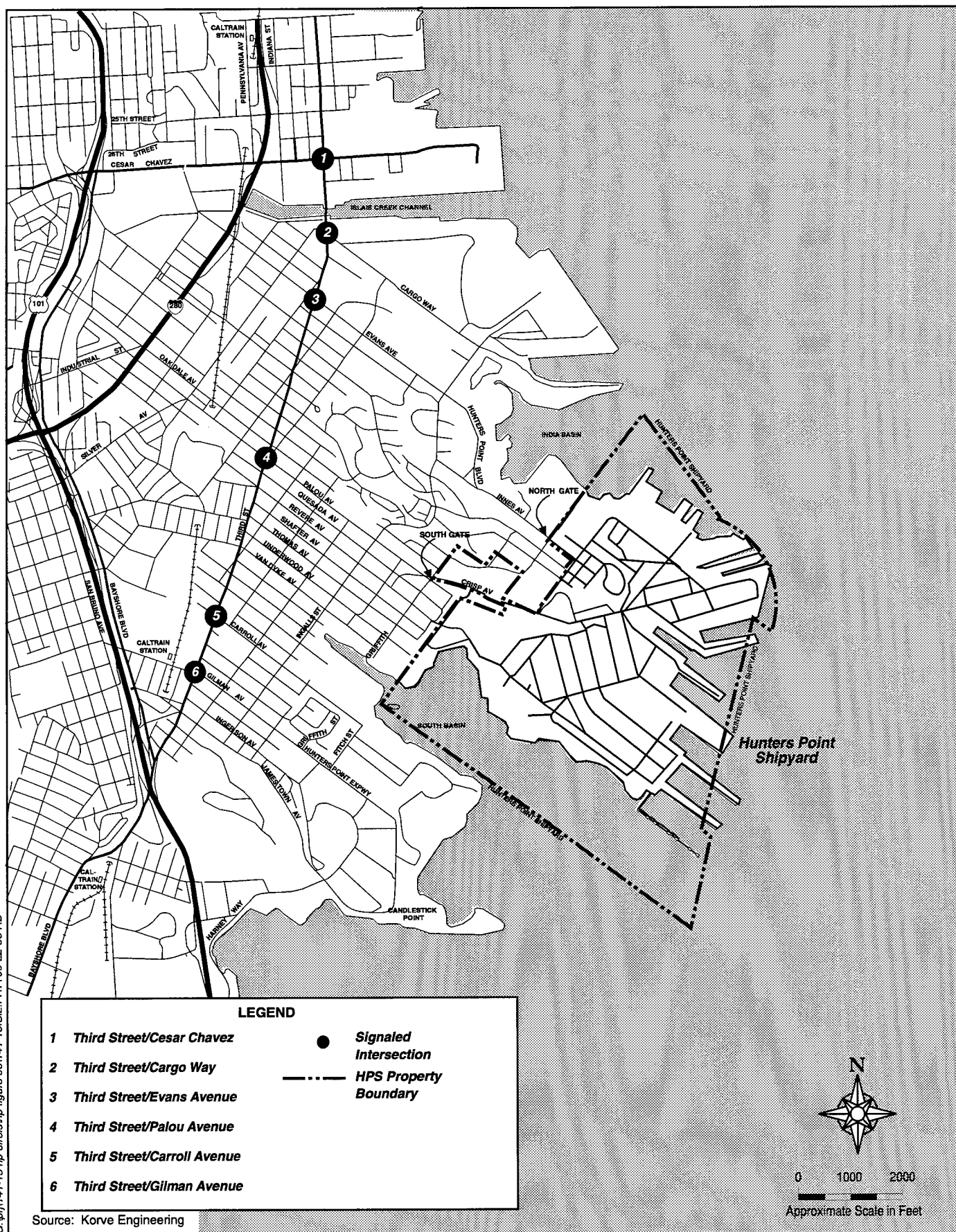


Figure B-3: Intersections Evaluated for Future Projects

Freeway LOS

Table B-20 presents future cumulative traffic volumes for key freeway segments in the project vicinity for both the HPS and Candlestick Point projects. As shown in the table, there are substantial differences in freeway volumes in the two analyses. The primary reason for the difference is that vehicle trips generated by the Candlestick Point Stadium and Retail/Entertainment Center project were not specifically accounted for in the HPS EIS/EIR analysis. The majority (80 percent) of the Candlestick Point Stadium and Retail/Entertainment Center project traffic would use Harney Way to access U.S. 101. By implementing the Candlestick Point Stadium and Retail/Entertainment Center project, freeway LOS would be substantially degraded, as U.S. 101 and I-280 in the vicinity of the project site would operate at LOS F, with the exception of I-280 northbound south of U.S. 101 (LOS D). In general, LOS E and F indicate that the freeway segments would operate at congested condition (i.e., at, or close to, capacity) and breakdowns in traffic flows would occur frequently.

Table B-20
Comparison of Freeway LOS for Future Cumulative Conditions
Weekday P.M. Peak Hour

Freeway Segment	Hunters Point EIS/EIR (2010)				On-going Candlestick Point Stadium and Retail/Entertainment Center Analysis (2015)			
	Northbound		Southbound		Northbound		Southbound	
	Volume	V/C and LOS	Volume	V/C and LOS	Volume	V/C and LOS	Volume	V/C and LOS
U.S. 101 at SF county line	6,540	0.71/D	6,440	0.70/D	9,957	1.13/F	11,220	1.28/F
I-280 South of U.S. 101	4,070	0.44/B	8,550	0.93/E	6,069	0.69/D	9,176	1.04/F

Note: The Candlestick Point Stadium and Retail/Entertainment Center analysis data was for 2015 plus Project scenario.

Percent of Traffic Contributed by the Hunters Point Project

Based on a combination of the Citywide Travel Behavior Survey (CTBS) and MTC regional travel forecasting model data, the majority (80 percent) of HPS traffic would use the Evans Avenue North Gate for access. Consequently, the HPS project's largest traffic contribution would be to the critical movements at the Third Street/Evans Avenue intersection. After traveling through this intersection, traffic would disperse. Congestion on this roadway would decrease as the distance from HPS increases. Table B-21 presents the percent of future cumulative intersection traffic that would be contributed by the HPS project during the weekday P.M. peak hour.

Table B-21
Percent of Intersection Traffic Contributed by the Hunters Point Project for
Future Cumulative Conditions (Weekday P.M. Peak Hour)

<i>Intersection</i>	<i>Total Critical Volume</i>	<i>Contribution by Hunters Point Traffic</i>	
		<i>Critical Volume</i>	<i>Percentage</i>
Third Street/Cesar Chavez Street	1,606	307	19.1%
Third Street/Cargo Way	1,402	465	33.5%
Third Street/Evans Avenue	1,542	565	36.6%
Third Street/ Palou Avenue	1,149	1	0.08%
Third Street/Carroll Avenue	893	110	12.3%
Third Street/Gilman Avenue	1,155	92	8%

Table B-22 presents the percent of future cumulative freeway traffic that would be contributed by the HPS project during the weekday P.M. peak hour.

Table B-22
Percent of Freeway Traffic Contributed by the Hunters Point Project for
Future Cumulative Conditions (Weekday P.M. Peak Hour)

<i>Freeway Segment</i>	<i>Future Traffic Volume (2015)</i>		<i>Contribution by Hunters Point Traffic (Volume and Percent Contribution)</i>	
	<i>Northbound</i>	<i>Southbound</i>	<i>Northbound</i>	<i>Southbound</i>
	<i>Volume</i>	<i>Volume</i>	<i>Volume and % Contribution</i>	<i>Volume and % Contribution</i>
U.S. 101 at SF county line	9,957	11,220	190/1.9%	190/1.69%
I-280 South of U.S. 101	6,069	9,176	120/1.98%	250/2.72%

Note: Future traffic volume data were obtained from the Candlestick Point Stadium and Retail/Entertainment Center analysis.

Traffic During Candlestick Point Stadium Project Construction Period

The Candlestick Point Stadium and Retail/Entertainment Center project sponsor has proposed the possibility of using HPS for game day parking for a period of about 2 years when the new stadium is under construction and the existing stadium (3Com Park) is open for ball games. During this period, it is anticipated that most parking spaces at 3Com Park would be displaced. In the worst-case situation, these spaces would be temporarily replaced in several locations. HPS is one of the sites being considered; the total number of spaces or acreage needed is not yet defined.

If HPS is considered for game day parking during the construction period, access to HPS would potentially be from two separate gates:

- Evans Avenue (North Gate) for vehicles from the north
- Crisp Avenue (South Gate) for vehicles from the south

Access to the Evans Avenue gate would most likely be from Third Street and Evans Avenue. Potential cumulative impacts would be additional queuing of vehicles turning left from Third Street to Evans Avenue. Long traffic queues are expected during the peak inbound period. In addition, the Third Street LRT project is expected to be under construction during this period. The Third Street LRT project would remove one travel lane from Third Street and, consequently, would further aggravate traffic conditions.

Access to the Crisp Avenue South Gate would come from both Third Street (via the Third Street ramp) and Hunters Point Parkway (via the Harney Way ramp). Potential cumulative impacts would be intrusions in the east-west direction residential streets, from Palou Avenue to Carroll Avenue. Currently congested streets in residential areas, such as Gilman, Ingerson and Jamestown Avenues, would benefit from the shifting of traffic traveling to and from the stadium to the other residential streets.

To reduce traffic impacts on the adjacent neighborhoods, clear traffic signs would need to be provided along U.S. 101 and at the Harney Way interchange to direct motorists to use the non-residential streets to access HPS.

Traffic Implications of the Proposed Yosemite Slough Bridge

The Yosemite Slough bridge was proposed to provide an additional access route to HPS from the south. This bridge would connect the HPS South Gate at the Crisp/Griffith intersection to U.S. 101 via Griffith Street, Hunters Point Parkway, and Harney Way. Carroll Avenue would be extended from Third Street to Bayshore Boulevard to allow access to U.S. 101 ramps at Bayshore Boulevard. This proposal (the bridge and the Carroll Avenue extension) are the subject of an ongoing feasibility study but have not been programmed in the RTIP. Without the Yosemite Slough bridge, it is anticipated that about 20 percent of all traffic entering and exiting HPS would use the South Gate at Crisp Avenue (about 370 vehicles in the A.M. peak hour and 410 vehicles in the P.M. peak hour).

It is not anticipated that the Yosemite Slough bridge connection would change the overall travel pattern entering and exiting HPS. The project distribution pattern was developed using a combination of data obtained from the MTC regional forecasting model and the Citywide Travel Behavior Survey (CTBS) for Superdistrict 3. It is estimated that the majority of the trips to HPS would be from San Francisco (74.5 percent), and the remaining trips would be from the North Bay (2.7 percent), East Bay (7.8 percent), and South Bay (15 percent). Based on this trip distribution pattern, it is estimated that approximately 80 percent of the vehicle trips would continue to use the Evans Avenue North Gate, regardless of whether the Yosemite Slough bridge connection is made.

The Yosemite Slough bridge connection would primarily change the route people take to enter and exit the South Gate. It is anticipated that there would be 179 vehicles (44 percent of all vehicles entering/exiting the South Gate) using this connection in the P.M. peak hour. This volume would translate to a commensurate reduction (179 vehicles in the P.M. peak hour) of neighborhood traffic intrusions in the Bayview-Hunters Point neighborhood. The remaining traffic would use Third Street to access other San Francisco neighborhoods.

Potential impacts of HPS-generated traffic on the following two intersections via the proposed Yosemite Slough bridge connection were also examined for typical weekday P.M. peak hour conditions.

- Harney Way and Alana Way
- Alana Way and Beatty Avenue

It is anticipated that in 2015, when the Candlestick Point Stadium and Retail/Entertainment Center project is fully constructed, these two intersections would operate at LOS F during the P.M. peak period with and without the Yosemite Slough bridge connection to HPS. It is estimated that the total number of vehicles from the HPS project that would use the Yosemite Slough bridge would represent a very small portion (about 5 percent) of the total approach traffic volumes at these two intersections.

The primary impacts at these two intersections would be generated by the Candlestick Point Stadium and Retail/Entertainment Center project and additional development at the Brisbane Bayland site. The Harney Way and Alana Way intersection and Alana Way and Beatty Avenue intersection are expected to operate at LOS F with or without the Candlestick Point project in 2015 (this assumes that a significant portion of the Brisbane Bayland project would be built). It is expected that this problem can only be rectified with significant modification to the existing U.S. 101 Harney Way/Alana Way/Beatty Avenue interchange.

Conclusions

The following additional impacts have been incorporated into EIS/EIR Section 4.1:

Significant and Unmitigable Impacts

Impact 1: Increased Cumulative Traffic at Third Street/Cesar Chavez Street Intersection. The Proposed Reuse Plan would contribute approximately 19 percent to the total cumulative traffic volume at the signalized Third Street/Cesar Chavez Street intersection. This intersection would operate during the P.M. peak hour at LOS F in 2015 with the extension of the Third Street LRT line (see Table B-19 and B-21 in Appendix B). The Third Street LRT project would reduce one through traffic lane in each direction on Third Street. Other intersections along Third Street could also experience significant cumulative traffic delay. Since there is no feasible mitigation measure to mitigate this cumulative impact, it is considered significant and unmitigable.

Impact 2: Increased Cumulative Traffic on U.S. 101 and I-280 Freeway Segments. The Proposed Reuse Plan would contribute to cumulative freeway mainline traffic impacts at U.S. 101 near the county line and along I-280 south of U.S. 101. The Proposed Reuse Plan would contribute approximately 2 percent or less to total cumulative traffic volumes on these freeway segments (see Table B-22 in Appendix B). Assuming completion of the Candlestick Point Stadium and Retail/Entertainment Center project, freeway mainline LOS at both these locations would operate at LOS F during the P.M. peak hour in 2015 (see Table 4.1-3). Since there is no plan to increase the freeway mainline capacity at both these locations, this cumulative impact would be significant and unmitigable.

Air Quality

Introduction

Two types of air quality analyses have been used in the EIS/EIR to quantify potential air quality impacts: dispersion modeling analyses to evaluate potential carbon monoxide concentrations, and vehicle emissions estimates to evaluate the significance of ozone precursor emissions from vehicle traffic. Both types of analyses use vehicle emission rates derived from the EMFAC7F vehicle emission rate model. However, emission rates used in a dispersion modeling analysis will be generated using different assumptions than those used for estimating ozone precursor emissions.

Emission rates for dispersion modeling analyses represent point estimates of vehicle operating conditions, while those used for ozone precursor evaluations reflect cumulative patterns of vehicle conditions over an entire trip. The following sections discuss the specific procedures used for the dispersion modeling and ozone precursor analyses.

Carbon Monoxide Dispersion Modeling Procedures

Predicting the ambient air quality impacts of pollutant emissions requires consideration of the transport, dispersion, chemical transformation, and removal processes which affect pollutant emissions after their release from a source. Gaussian dispersion models are frequently used for such analyses. The term "gaussian dispersion" refers to a general type of mathematical equation used to describe the horizontal and vertical distribution of pollutants downwind from an emission source.

Gaussian dispersion models treat pollutant emissions as being carried downwind in a defined plume, subject to horizontal and vertical mixing with the surrounding atmosphere. The plume spreads horizontally and vertically with a reduction in pollutant concentrations as it travels downwind. Mixing with the surrounding atmosphere is greatest at the edge of the plume, resulting in lower pollutant concentrations outward (horizontally and vertically) from the plume center. This decrease in concentration outward from the center of the plume is treated as following a gaussian ("normal") statistical distribution. Horizontal and vertical mixing generally occurs at different rates. Because turbulent motions in the atmosphere occur on a variety of spatial and time scales, vertical and horizontal mixing also varies with distance downwind from the emission source.

Dispersion models calculate pollutant concentrations at particular locations ("receptors" in modeling jargon) by applying appropriate horizontal and vertical dispersion factor equations to the initial pollutant concentration. The dispersion factor equations are determined from the spatial position of the receptor relative to the emission source location and the centerline of the pollutant plume extending downwind from the emission source.

When more than one emission source affects a particular receptor location, the total pollutant concentration at the receptor is the sum of the individual pollutant increments contributed by each emission source.

The reference to "pollution plumes" implies an analogy to physically mixing fluids (air in this case) with different pollutant concentrations. That would seem to suggest that the pollution concentration at a given location would be the average, not the sum, of the incremental concentrations from each overlapping plume. Despite the use of "pollution plume" technology, the fluid mixing analogy is inappropriate in the context of atmospheric dispersion models.

The flaw in the fluid analogy involves the total volume of fluid present as additional emission source contributions are added. The volume of "carrier fluid" (air) at a receptor point remains constant regardless of the number of overlapping pollution plumes affecting the site.

The faulty fluid analogy can be visualized as pouring buckets of water with different salt concentrations into an empty swimming pool. The resulting pollutant (salt) concentration is the weighted average of the concentrations in the incremental additions of salty water. The actual situation with atmospheric dispersion modeling is more like pouring different sized jars of salt into a swimming pool already filled with water. The resulting pollutant (salt) concentration is the sum of the effects of the incremental additions of salt.

In more technical terms, atmospheric dispersion models operate by simulating the spatial distribution of pollutant molecules, rather than simulating the mixing of fluids per se. The pollution plume terminology that leads to confusion is, however, too thoroughly engrained in the modeling literature to change.

Dispersion modeling analyses for this EIS/EIR used the CALINE4 dispersion model and vehicle emission rates derived from the California Air Resources Board's (CARB's) EMFAC7F vehicle emission rate model.

The CALINE4 Model

CALINE4 (Benson, 1989) is a gaussian dispersion model developed by the California Department of Transportation (Caltrans) to evaluate ambient air quality conditions near highways. Modeled highway links are analyzed in the model as a sequence of short segments. Each segment of a highway link is treated as a separate emission source producing a plume of pollutants which disperses downwind. Pollutant concentrations at any specific location are calculated as the total contribution from overlapping pollution plumes originating from the sequence of roadway segments.

The CALINE4 model employs a "mixing cell" approach to estimating pollutant concentrations over the roadway itself. Vertical dispersion of pollutants above the roadway are assumed to be deposited by mechanical turbulence from moving vehicles and convective mixing due to the temperature of vehicle exhaust gases. In this situation, the vertical limit of mixing (i.e., the height of the mixing cell) becomes a function of pollutant residence time within the mixing cell. Residence time depends on mixing cell width, wind angle relative to the mixing cell, and wind speed. The width of the mixing cell over each

roadway segment is based on the width of the highway traffic lanes plus an additional vehicle-induced turbulence zone on either side. Parking lanes and roadway shoulders are not counted as traffic lanes.

The CALINE4 model computes an initial vertical dispersion parameter to characterize the vertical profile of pollutant concentrations over the roadway. Pollutant concentrations downwind from the mixing cell are then calculated using horizontal and vertical dispersion rates which are a function of various meteorological and ground surface conditions.

When winds are essentially parallel to a highway link, pollution plumes from all roadway segments overlap. Mixing produces high concentrations near the roadway (near the center of the overlapping pollution plumes), and low concentrations well away from the highway (at the edges of the overlapping pollution plumes). When winds are at an angle to the highway link, pollution plumes from distant roadway segments make essentially no contribution to the pollution concentrations observed at a receptor location. Under such cross-wind situations, pollutant concentrations near the highway are lower than under parallel wind conditions (fewer overlapping plume contributions), while pollutant concentrations away from the highway may be greater than would occur with parallel winds (near the center of at least some pollution plumes).

The CALINE4 model was originally released in 1984. Minor program revisions were made in 1988 and 1989. One of the program revisions made in 1989 introduced an altitude-based air pressure correction factor into the equation that converts air quality units from micrograms per cubic meter to parts per million by volume. By definition, such unit conversions should be done for 25 degrees Celsius (77 degrees Fahrenheit) and 1 atmosphere pressure (for proper comparison to Federal and state ambient air quality standards). Actual ambient monitoring data must be corrected for temperature and pressure effects of actual ambient temperature and pressure. The reverse procedure of adjusting modeling results to study area ambient temperature and air pressure should not be used.

All CALINE4 modeling conducted for this EIS/EIR used the model in the standard link run mode. Excess idling emissions at congested intersections were addressed through a simple emission rate adjustment procedure (Sculley, 1989). The intersection link option in CALINE4 was not used.

Roadway and Traffic Conditions

The highway network modeled for this EIS/EIR included:

- U.S.101 between Bay Shore Boulevard and I-280;
- I-280 from U.S.101 to Cesar Chavez Street;
- Third Street from U.S.101 to Cesar Chavez Street;
- The Evans Avenue/Innes Avenue corridor from Quint Street to Coleman Street;

- Palou Avenue from Newhall Street to Crisp Avenue;
- Paul Avenue/Gilman Avenue from Gould Street to Jennings Street;
- Crisp Avenue;
- Spear Avenue;
- H Street south of Spear Avenue;
- Donahue Street from Innes Avenue to Lockwood Street; and
- Lockwood Street between Donahue Street and Spear Avenue.

Roadway coordinates were scaled from topographic maps. Most roadways were modeled as multiple link segments to reflect changes in roadway alignment and traffic volumes. Separate 1-block links were established at 3 intersections along Third Street so that the effects of extended vehicle idling could be analyzed. The overall roadway network was modeled as a system of 40 roadway links.

Most roadway links were modeled as at-grade roadways. Some of the freeway links were modeled as bridge links, with a relative elevation of 30 feet (9 m). Most mixing zone widths were based on a 5-foot (1.5-m) turbulence zone on each side of the roadway, 12-foot (3.7-m) lane widths for surface streets, and 14-foot (4.3-m) lane widths for freeways. Roadway segments at heavily congested intersections were modeled with a mixing zone width based only on traffic lanes.

Modeled traffic volumes were based on 2010 and 2025 afternoon peak hour conditions for the No Action, Proposed Reuse Plan, and Reduced Development alternatives. Modeled non roadways were treated in a directional manner; traffic volumes and speeds in both directions were assigned to a single link. Surface street volumes were taken (or interpolated) from intersection level of service analyses developed for the traffic impact section by Korve Engineering. Freeway volumes were estimated by inflating pre-earthquake volumes by 5 percent for 2010 and 10 percent for 2025, with an additional increment of reuse plan traffic based on peak hour traffic generation and directional distribution provided by Korve Engineering.

Table B-23 summarizes the roadway network used for the CALINE4 modeling analysis.

Receptor Locations

Carbon monoxide concentrations were calculated for 12 receptor locations at 4 intersections: Evans Avenue and Third Street (4 receptors), Palou Avenue and Third Street (4 receptors), Innes Avenue and Donahue Street (2 receptors north of Innes Avenue), and H Street and Spear Avenue (2 receptors south of Spear Avenue). Receptor coordinates represent locations 50 feet (15 m) from the centerlines of adjacent roadways. Receptor coordinates were calculated from roadway link coordinates using a coordinate geometry spreadsheet. All receptor heights were set at 5 feet (1.5 m). Table B-24 presents the receptor coordinates used for the CALINE4 modeling.

Meteorological and Surface Roughness Parameters

All CALINE4 runs assumed a wind speed of 1.0 meters per second (2.2 mph), stable atmospheric conditions (stability class E and a horizontal wind direction fluctuation parameter of 10 degrees), and a mixing height limit of 50 meters (164 feet). Wind directions were varied in 10 degree increments to identify the situation producing the highest total pollutant concentration at each receptor location.

The CALINE4 model was run using an averaging time of 60 minutes and a surface roughness factor of 75 centimeters (30 inches). No settling or deposition velocities were used. A scale factor of 0.3048 was used to convert and receptor coordinate units from feet to meters.

Table B-23
Modeled Roadway Network

Roadway	Segment	Link Segment Coordinates				Segment Length	Lanes	P.M. Peak Hour Volumes					Free Flow Speed	Delay Time Per Vehicle (Sec.)								
		X1	Y1	X2	Y2			Existing	No P 2010	No P 2025	Proj 2010	Proj 2025		Rd 2010	Rd 2025	Existing	No P 2010	No P 2025	Proj 2010	Proj 2025	Rd 2010	Rd 2025
Third St.	Jamestown	586	3515	1055	4335	945	6	2344	1920	2275	2147	2616	2002	2416	35							
	Hollister	1055	4335	1250	4882	581	6	2344	1920	2275	2147	2616	2002	2416	35							
	Gilman	1250	4882	1328	5156	284	6	2344	1920	2275	2147	2616	2002	2416	35							
	Fitzgerald	1328	5156	1406	5429	284	6	2511	2027	2393	2254	2734	2109	2534	35							
	Carroll	1406	5429	1719	6249	878	6	2134	1693	2016	1918	2356	1774	2155	35							
	Quesada	1719	6249	2617	9139	3027	6	2128	1688	2004	1906	2330	1764	2137	35							
	Palou	2617	9139	2695	9413	284	6	2539	2088	2480	2303	2738	2164	2610	35							
	Newcomb	2695	9413	2734	9686	276	6	2526	2043	2424	2080	2419	2057	2448	35							
	Fairfax	2734	9686	3515	12303	2731	6	2506	2041	2420	2147	2554	2082	2488	35							
	Evans	3515	12303	3593	12577	284	6	2485	2039	2415	2214	2689	2106	2528	35			10	13	9	11	
	Davidson	3593	12577	3710	12967	408	6	2544	2030	2405	2794	3537	2299	2862	35			16	41	13	21	
	Burke	3710	12967	3789	13397	437	6	2411	1932	2295	2735	3445	2214	2775	35							
Gilman	Cargo	3789	13397	3789	13865	469	6	2277	1833	2184	2676	3352	2129	2688	35							
	C. Chavez	3789	13865	3671	15272	1411	6	2673	2182	2549	3015	3719	2478	3053	35	6	6	9	19	6	9	
	W Third	742	5273	1328	5156	597	2	565	515	542	515	542	515	542	25							
	E Third	1328	5156	1875	4804	650	2	424	412	426	412	426	412	426	25							
	Palou	2148	9764	2695	9413	650	2	549	531	553	531	543	531	553	25							
	E Third	2695	9413	3242	8983	695	2	488	472	489	722	832	560	639	25							
	Crisp	3242	8983	5937	7069	3305	2	488	472	489	722	832	560	639	25							
	W Third	2851	13084	3593	12577	899	4	1299	1379	1542	1863	2287	1566	1837	35							
	E Third	3593	12577	3945	12303	445	4	1492	1576	1760	3013	3927	2099	2641	35	13	42	16	86	131	22	
	W HP Blvd.	3945	12303	6562	10467	3197	4	831	873	965	2337	3173	1396	1863	35							
	Evans	HP Jog	6562	10467	6796	9882	631	4	170	170	170	1660	2418	693	1085	35						
		N Innes	6796	9882	6757	8905	977	4	224	224	224	1734	2491	768	1158	35						
W Donahue		6757	8505	8749	7499	2438	4	224	224	224	1734	2491	768	1158	35							
	W Coleman	8749	7499	9257	7108	641	2	155	155	155	1418	2175	550	940	25							

Table B-23, continued
Modeled Roadway Network

Roadway	Segment	Link Segment Coordinates				Segment Length	Lanes	P.M. Peak Hour Volumes					Free Flow Speed	Delay Time Per Vehicle (Sec.)				
		X1	Y1	X2	Y2			Existing	No P 2010	No P 2025	Proj 2010	Proj 2025		Existing	No P 2010	No P 2025	Proj 2010	Proj 2025
Donahue	S Lockwood	8749	7499	9491	8358	1135	2	144	144	144	1001	1526	408	667	25			
Lockwood	W Spear	9491	8358	11639	6835	2633	2	24	24	24	213	365	91	109	25			
Crisp	S Palou	5351	7108	5937	7089	587	2	47	47	47	610	767	114	189	25			
	N Palou	5937	7069	6757	6952	829	2	47	47	47	610	767	114	189	25			
	W Spear	6757	6952	8827	6054	2257	2	47	47	47	610	767	114	189	25			
Spear	S Crisp	7812	5781	8827	6054	1052	2	45	45	45	103	138	73	90	25			
	S Fisher	8827	6054	9999	6366	1213	2	60	60	60	654	798	122	175	25			
	S Lockwood	9999	6366	11639	6835	1706	2	17	17	17	98	197	57	129	25			
H Street	S Spear	8827	6054	9218	4609	1497	2	45	45	45	676	922	134	232	25			
U.S.101	S 280	469	2812	-1797	9921	7461	8	28500	29925	31350	30295	31918	30065	31595	65			
I-280	Thru 101	-1797	9921	-547	10702	1474	4	6000	6300	6600	6722	7249	6460	6880	65			
	Frm NB 101	-1640	9296	-547	10702	1781	4	2300	2415	2530	2415	2530	2415	2530	65			
	Evans	-547	10702	1875	10077	2501	6	8300	8715	9130	9085	9698	8855	9375	65			
	C. Chavez	1875	10077	2422	15272	5223	6	8300	8715	9130	9085	9698	8855	9375	65			

Source: Tetra Tech, Inc., 1996.

TABLE B-24
CALINE4 Receptor Coordinates

<i>Receptor</i>	<i>X-Coord.</i>	<i>Y-Coord.</i>	<i>Offset</i>
NW Evans & 3rd	3565	12657	50
NE Evans & 3rd	3651	12595	50
SW Evans & 3rd	3535	12556	50
SE Evans & 3rd	3621	12492	50
NW Palou & 3rd	2656	9497	50
NE Palou & 3rd	2749	9435	50
SW Palou & 3rd	2637	9391	50
SE Palou & 3rd	2723	9328	50
NW Innes & Donahue	8741	7566	50
NE Innes & Donahue	8822	7507	50
SW H St. & Spear	8792	5993	50
SE H St. & Spear	8888	6019	50

Source: Tetra Tech, Inc., 1996.

Background Concentrations

The CALINE4 model allows a uniform background pollutant concentration to be entered for each meteorological scenario. Background concentrations represent ambient pollution increments from unmodeled emission sources. In reality, background pollutant concentrations can vary with both the meteorological scenario and the specific receptor location. Consequently, no background carbon monoxide concentrations were entered in the CALINE4 input file. A peak hour background concentration of 4 ppm was manually added to the modeling results for each receptor location. The background concentration represents an estimated contribution from modeled roadways and parking facilities.

8-Hour Average Carbon Monoxide Concentrations

Potential 8-hour average carbon monoxide levels were estimated by applying a persistence factor of 74.6 percent to the maximum 1-hour carbon monoxide levels (modeled increment

plus background) for each receptor location. The persistence factor was calculated from the maximum 8-hour and maximum 1-hour carbon monoxide concentrations reported at the BAAQMD's Arkansas Street monitoring station for 1989-1993 (see Table 3.2-2 in the EIS/EIR).

Vehicle Emission Rates

The EMFAC7F vehicle emission rate program (CARB, 1992, 1993, 1993a, 1993b) was used to estimate carbon monoxide emission rates for vehicles operating on roadways in the study area. EMFAC7F determines vehicle emission rates based on a wide range of factors: pollutants of interest; calendar year; air temperature; mix of vehicle types; average route speed; age distribution of vehicles by type; average annual mileage accumulations by vehicle age and type; basic exhaust emission rates for new vehicles by vehicle type and model year; deterioration rates for exhaust emissions by vehicle type and accumulated n-mileage; and vehicle effectiveness in inspection and maintenance programs.

EMFAC7F is designed primarily for use in generating regional and statewide emission inventories rather than vmt-based emission rates used for dispersion models. In addition, the model is structured to use default values for most input parameters. Consequently, standardized EMFAC7F output files provided by CARB were placed into a spreadsheet model that performs appropriate unit conversions and composite weightings while allowing the user to vary key parameters of interest. Lookup table data in the spreadsheet version of EMFAC7F are based on 5 mph (8 km per hour) speed increments and 10 degree temperature increments. Key input data and assumption used for the dispersion modeling analysis are discussed below.

Calendar Years

Average vehicle emission rates depend on the types and condition of vehicles operating in the area of concern. Federal and state motor vehicle emission control programs are resulting in a continuing reduction in average emission rates for most types of vehicles. Average emission rates will change in the future as vehicles manufactured without sophisticated emission control systems are replaced by newer vehicles with more extensive emission control systems. Air quality analyses involving highway traffic conditions must therefore reflect vehicle emission rate for an appropriate calendar year.

The EMFAC7F program includes emission rates for calendar years from 1980 to 2020. Emission rates used for this EIS/EIR were for 2010 and 2020. The emission rates for 2020 were used for the buildout (2025) analyses.

Air Temperature

Vehicle emission rates for carbon monoxide vary with ambient air temperature, generally being higher at lower temperatures. Carbon monoxide problems are primarily a winter phenomenon, and tend to occur most often in the late afternoon and evening hours. A

typical winter season late afternoon air temperature of 50 degrees Fahrenheit (10 degrees Celsius) was used for all emission rates.

Vehicle Mixes

The EMFAC7 model contains emission rate data for several categories of vehicles, with distinctions based primarily on vehicle weight and fuel type. Different vehicle mixes were used for surface streets and freeways included in the dispersion modeling analysis. The vehicle mixes were generated by a spreadsheet model that adjusts regional vehicle registration data for alternative heavy truck fractions.

The surface street vehicle mix was 71.56 percent autos, 13.36 percent light trucks/vans, 1.32 percent medium truck/vans, 8.75 percent gasoline-fueled heavy trucks, 4.12 percent diesel-fueled heavy trucks, and 0.89 percent motorcycles. The freeway vehicle mix was 70.29 percent autos, 13.13 percent light trucks/vans, 1.30 percent medium trucks/vans, 6.17 percent gasoline-fueled heavy trucks, 8.23 percent diesel-fueled heavy trucks, and 0.88 percent motorcycles. The spreadsheet version of EMFAC7F uses CARB default factors to split the light and medium duty vehicle types into catalyst-equipped, noncatalyst, and diesel-fueled subtypes.

Vehicle Operating Models

The EMFAC7F program recognizes three operating mode conditions for gasoline-fueled passenger vehicles. These operating modes (cold start, hot start, and hot stabilized) are a function of four factors: how long a vehicle's engine has been on; how long the vehicle was parked before the engine was started; the operating mode condition of the vehicle at the time it was previously parked, and whether the vehicle has a catalytic converter. Vehicles operating in a cold start mode have significantly higher emission rates than those operating in hot start or hot stabilized modes.

Vehicle operating mode definitions reflect the conditions of standardized test procedures used to certify that new vehicles meet applicable Federal and state emission standards. By definition, the hot stabilized mode represents all vehicle operation occurring after the engine has been on for 505 seconds. The first 505 seconds of vehicle operation will be in either a cold start or a hot start mode. Cold start and hot start operating mode are distinguished by three factors: the operating mode condition of the vehicle when parked; the duration of parking preceding vehicle start-up; and the presence or absence of a catalytic converter.

Vehicles with a catalytic converter will resume operations in a cold start mode after the engine has been off for 1 hour or more. Vehicles without a catalytic converter resume operations in a cold start mode after the engine has been off for 4 hours or more. Any vehicle which is still in a cold start mode when parked will resume operations in a cold start mode regardless of the parking duration.

If a catalyst-equipped vehicle is parked for less than 1 hour, it will resume operations in a hot start mode (unless the vehicle was still in a cold start mode when it parked). If a noncatalyst vehicle is parked for a period of less than 4 hours, it will resume operations in a hot start mode.

Parking duration patterns vary by trip purpose. Work trips often begin in a cold start mode and end with a long parking duration. Shopping trips are more likely to begin in a hot start mode and end with a short or intermediate parking duration. Typical cold start and hot start patterns by trip type have been developed by Caltrans using data from statewide travel pattern surveys (Caltrans, 1981).

Vehicle emission rates used in a dispersion modeling analysis should reflect a point estimate of the fraction of vehicles operating in start mode conditions along various roadway segments. This can be calculated by estimating two components of the traffic flow for relevant roadway segments: the mix of trip purposes for the time period being modeled, and the fraction of vehicles that will have been in operation for more than 8.4 minutes (505 seconds). The Caltrans start mode fractions can then be applied to derive cold start and hot start fractions.

A simple spreadsheet model was used to perform the operating mode calculation, assuming a single operating mode for all roadways being modeled. The Caltrans start mode fraction data used in the spreadsheet were adjusted for the effects of trips completed while in a cold start mode. Table B-25 presents the results of this analysis. For carbon monoxide modeling purposes, vehicle emission rates were calculated using the weighted average operating mode fractions (25.47 percent cold start, 12.53 percent hot start, and 62 percent hot stabilized). Because there will be so few noncatalyst vehicles in 2010 and 2020, the operating mode fractions remain the same for both calendar years.

Vehicle Speeds

Emission rates used in the dispersion modeling analysis were calculated for various average traffic speed conditions. Emission rates for 10 mph (16 km per hour) and 25 mph (40 km per hour) were used for surface street traffic, to account for most delays caused by turning vehicles or by intersection traffic controls. Emission rates for a 35 mph (56 km per hour) average speed were used for U.S.101 traffic. Emission rates for a 45 mph (72 km per hour) average speed were used for I-280 traffic.

Excess Idling Emissions

The equations used in the vehicle emission rate models incorporate coefficients representing speed-dependent patterns of vehicle idling, acceleration, cruising, and deceleration. The resulting vehicle emission rates do not represent a constant speed cruise condition. Instead, they represent a pattern of speed changes representing an overall average route speed. The amount of idling time inherent in the emission rate models

increases from about 2 percent of travel time at 55 mph (88 km per hour) to 10 percent at 30 mph (48 km per hour) and to 48 percent at 5 mph (8 km per hour) (Smith and Adrich, 1977; Sculley, 1989). This inherent pattern adequately accounts for congestion-related idling on most roadways that do not experience significant congestion or signalization delays.

The amount of vehicle idling at congested or signalized intersections can exceed the amount of idling inherent in the vehicle emission rate models, even if low intersection approach speeds are assumed. To more adequately account for idling at congested intersections, speed adjustments were made to the basic EMFAC7F emission rates for roadway links at congested intersections.

Table B-25
P.M. Peak Hour Operating Modes, Local Traffic

	<i>Trip</i>	<i>Hot</i>	<i>Cold</i>	<i>Hot</i>
<i>Trip</i>	<i>Purpose</i>	<i>Stable</i>	<i>Start</i>	<i>Start</i>
<i>Purpose</i>	<i>Mix</i>	<i>Fraction</i>	<i>Fraction</i>	<i>Fraction</i>
H-W	50.00%	75.00%	23.12%	1.88%
H-S	10.00%	20.00%	42.15%	37.85%
H-O	20.00%	60.00%	27.24%	12.76%
O-W	10.00%	55.00%	28.09%	16.91%
O-O	10.00%	50.00%	14.34%	35.66%
WTD Mean:		62.00%	25.47%	12.53%

	<i>Cold Start</i>	<i>Hot Start</i>
Catalyst	25.54%	12.46%
Noncatalyst	18.41%	19.59%

Start Mode Split Factors:

	<i>Catalyst Vehicles</i>		<i>Noncat Vehicles</i>	
<i>Trip Purpose</i>	<i>Cold Starts</i>	<i>Hot Starts</i>	<i>Cold Starts</i>	<i>Hot Starts</i>
H-W	92.63%	7.37%	80.04%	19.96%
H-S	52.89%	47.11%	33.61%	66.39%
H-O	68.35%	31.65%	43.38%	56.62%
O-W	62.64%	37.36%	40.73%	59.27%
O-O	28.90%	71.10%	8.25%	91.75%
WTD Mean:	74.43%	25.57%	56.96%	43.05%

Source: Tetra Tech, Inc., 1996.

Catalyst % for gasoline-fueled vehicles: 98.96 percent

Start Mode = First 505 seconds of vehicle travel

Stable Mode = Travel after 505 seconds of vehicle operation

The basic idle adjustment procedure requires using relatively short roadway links at congested intersections that will be modeled. Based on the length of these links and the assumed average vehicle speed, the amount of idling time inherent in the emission rate model can be determined. This idling time value can then be compared to an estimate of expected actual delay time per vehicle (based on intersection delay analyses, level-of-service estimates, or signal cycle times). If the expected actual delay per vehicle exceeds the idling time accounted for in the vehicle emission rates, an excess idling emission rate increment can be calculated and added to the basic EMFAC7F rate.

Table B-23 includes the overall delay time per vehicle for those roadway links that required an excess idling adjustment to the basic EMFAC7F emission rates. The required amount of idling time was estimated from intersection delay analyses provided by Korve Engineering. Because the intersection delay values reflect only the approach lane traffic volumes, delay times from the Korve analysis had to be averaged over the total traffic volume for the modeled roadway links. Thus, the display times noted in Table B-23 are lower than the values presented in the intersection delay calculations of the Korve Engineering traffic analysis.

The EMFAC7F model does not provide a direct calculation of idling emission rates, but idling rates can be estimated from emission rates at low average speeds. The conventional approach for estimating hot stabilized idling emission rates is to convert a 5-mph (8-km per hour), 100 percent hot stabilized emission rate into a time-based rate (grams of pollutant per minute). Because of the internal structure of the EMFAC7F model, it is also necessary to calculate a cold start common factor from 100 percent stabilized mode and 100 percent cold start mode emission rates at a speed of 16 mph (26 km per hour).

Table B-26 summarizes the idling delay adjustments used for 2010 emission rates. Table B-27 summarizes the idling delay adjustments used for the 2025 emission rates.

Ozone Precursor Emission Estimates

Ozone is not emitted directly to the atmosphere, but is formed from complex chemical reactions in the atmosphere in the presence of sunlight. The directly emitted pollutants (ozone precursors) producing ozone in photochemical smog reactions fall into two groups: reactive organic compounds and nitrogen oxides. Motor vehicle emissions are a major source of both pollutant groups.

Ozone precursor emissions associated with vehicle travel under the project alternatives were estimated by combining appropriate vehicle emission rates and travel pattern estimates. Travel pattern estimates were developed to reflect typical trip patterns for average week day conditions. Traffic studies conducted by Korve Engineering were used as the starting point for the trip generation and travel pattern analysis.

Table B-26
Emission Factor Adjustment for Extended Engine Idling Time—Year 2010 Emission Rates

Input Variables	No Action, 2010				Proposed Project, 2010				Reduced Density, 2025			
	3rd St,		Evans,		3rd St,		Evans,		3rd St,		Evans,	
	Chavez	E 3rd	Chavez	E 3rd	Chavez	E 3rd	Chavez	E 3rd	Chavez	E 3rd	Chavez	E 3rd
Speed (mph) For Base Emission Rate	25	10	25	10	25	10	25	10	25	10	25	10
Link Length, Feet	1,411	445	1,411	445	1,411	445	1,411	445	1,411	445	1,411	445
Delay Per Vehicle, Seconds of Idle	6	42	6	42	6	42	6	42	6	42	6	42
Base Emission Rate, GM/min	4.58	8.65	4.58	8.65	4.58	8.65	4.58	8.65	4.58	8.65	4.58	8.65
100% Stabilized 5 mph Rate, GM/min	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44	11.44
100% Stabilized 16 mph Rate, GM/min	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92	4.92
100% Cold Start 16 mph Rate, GM/min	10.63	10.63	10.63	10.63	10.63	10.63	10.63	10.63	10.63	10.63	10.63	10.63
% Catalyst Vehicles	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96
% Non-Catalyst Cold Starts	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41
% Catalyst Cold Starts	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54
Output												
Hot Stabilized Idle Rate, GM/min	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adjusted Cold Start 5 mph rate, GM/min	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72	24.72
Cold Start Idle Rate, GM/min	2.0597	2.0597	2.0597	2.0597	2.0597	2.0597	2.0597	2.0597	2.0597	2.0597	2.0597	2.0597
% Idle Time in EMFAC Rates	13.65	32.99	13.65	32.99	13.65	32.99	13.65	32.99	13.65	32.99	13.65	32.99
Idle Seconds in EMFAC Rates	5.25	10.01	5.25	10.01	5.25	10.01	5.25	10.01	5.25	10.01	5.25	10.01
Required Extra Idle Seconds	0.75	31.99	0.75	31.99	0.75	31.99	0.75	31.99	0.75	31.99	0.75	31.99

Table B-26, continued
Emission Factor Adjustment for Extended Engine Idling Time—Year 2010 Emission Rates

Input Variables	No Action, 2010				Proposed Project, 2010				Reduced Density, 2025			
	3rd St,	Evans,	E 3rd		3rd St,	Evans,	E 3rd		3rd St,	Evans,	E 3rd	
	Chavez				Chavez				Chavez			
Weighted % Cold Starts	25.47	25.47	25.47		25.47	25.47	25.47		25.47	25.47	25.47	
Weighted Cold/Hot Idle Rate, GM/min	1.2351	1.2351	1.2351		1.2351	1.2351	1.2351		1.2351	1.2351	1.2351	
Base Emission Rate, GM/min	4.58	8.65	8.65		4.58	8.65	8.65		4.58	8.65	8.65	
Added Idle Adjustment, GM/min	0.06	7.81	1.38		0.29	18.56	1.00		0.06	1.02	2.93	
Adjusted Emission rate, GM/min	4.64	16.46	10.03		4.87	27.21	9.65		4.64	9.67	11.58	
Adjustment Factor, % Increase	1.3%	90.3%	16.0%		6.3%	214.6%	11.6%		1.3%	11.8%	33.9%	

Source: Tetra Tech, Inc., 1996.

TABLE B-27
Emission Factor Adjustment for Extended Engine Idling Time—Year 2025 Emission Rates

Input Variables	No Action, 2010				Proposed Project, 2010				Reduced Density, 2025			
	3rd St,	Evans,	3rd St,	Evans,	3rd St,	Evans,	3rd St,	Evans,	3rd St,	Evans,	3rd St,	Evans,
	Chavez	E 3rd	Evans	Davidson	Chavez	E 3rd	Evans	Davidson	Chavez	E 3rd	Evans	Davidson
Speed (mph) For Base Emission Rate	25	10	10	10	25	10	10	10	25	10	10	10
Link Length, Feet	1,411	445	284	408	1,411	445	284	408	1,411	445	284	408
Delay Per Vehicle, Seconds of Idle	6	16	13	41	19	131	11	21	9	33	7.38	10.50
Base Emission Rate, GM/min	3.60	7.38	7.38	7.38	3.60	7.38	7.38	7.38	3.60	7.38	7.38	7.38
100% Stabilized 5 mph Rate, GM/min	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50
100% Stabilized 16 mph Rate, GM/min	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57	4.57
100% Cold Start 16 mph Rate, GM/min	7.76	7.76	7.76	7.76	7.76	7.76	7.76	7.76	7.76	7.76	7.76	7.76
% Catalyst Vehicles	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96	98.96
% Non-Catalyst Cold Starts	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41	18.41
% Catalyst Cold Starts	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54	25.54
Output												
Hot Stabilized Idle Rate, GM/min	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adjusted Cold Start 5 mph rate, GM/min	17.83	17.83	17.83	17.83	17.83	17.83	17.83	17.83	17.83	17.83	17.83	17.83
Cold Start Idle Rate, GM/min	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858	1.4858
% Idle Time in EMFAC Rates	13.65	32.99	32.99	32.99	13.65	32.99	32.99	32.99	13.65	32.99	32.99	32.99
Idle Seconds in EMFAC Rates	5.25	10.01	6.39	9.18	5.25	10.01	6.39	9.18	5.25	10.01	6.39	9.18
Required Extra Idle Seconds	0.75	5.99	6.61	31.82	13.75	120.99	4.61	11.82	3.75	22.99	4.61	11.82

TABLE B-27, continued
Emission Factor Adjustment for Extended Engine Idling Time—Year 2025 Emission Rates

Input Variables	No Action, 2010			Proposed Project, 2010			Reduced Density, 2025					
	Chavez	Evans	E 3rd	3rd St,	Evans	E 3rd	3rd St,	Evans	E 3rd	3rd St,	Evans	E 3rd
Weighted % Cold Starts	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47	25.47
Weighted Cold/Hot Idle Rate, GM/min	1.0305	1.0305	1.0305	1.0305	1.0305	1.0305	1.0305	1.0305	1.0305	1.0305	1.0305	1.0305
Base Emission Rate, GM/min	3.60	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38	7.38
Added Idle Adjustment, GM/min	0.05	1.22	2.11	7.07	0.88	24.66	1.47	2.63	0.24	4.69		
Adjusted Emission rate, GM/min	3.65	8.60	9.49	14.45	4.48	32.04	8.85	10.01	3.84	12.07		
Adjustment Factor, % Increase	1.3%	16.5%	28.6%	95.8%	24.5%	334.1%	20.0%	35.6%	6.7%	63.5%		

Source: Tetra Tech, Inc., 1996.

Vehicle emission rates were calculated using the EMAC7F vehicle emission rate model. As noted previously, the approach used to generate appropriate vehicle emission rates for an ozone precursor analysis differs somewhat from the approach used for carbon monoxide dispersion modeling. Because vehicle emission rates are a nonlinear function of speed and operating mode conditions, using single "daily average" values for key parameters can introduce significant errors into the emission estimates. A better approach is to develop distribution patterns that reflect vehicle operating conditions and speeds over an entire day.

Trip generation for each land use category was disaggregated into trip purpose components. Travel time distributions were estimated for each trip purpose category. The travel time distributions provided a mean travel time and a mean vehicle operating mode pattern. The mean travel time was then combined with a speed distribution pattern to compute appropriate weighted average travel distances and emission rates for each trip purpose. The travel distances and emission rates were then combined to produce estimated vehicle emissions for trips associated with each land use category for a particular reuse scenario.

Major steps in the analysis procedure are discussed below.

Trip Generation

Korve Engineering developed vehicle trip generation estimates for the reuse alternatives as part of the traffic analysis presented in the EIS/EIR text. The daily vehicle trip generation rates are presented in Table B-9 and daily person and vehicle trips are presented in Table 4.1-2. The vehicle trip generation estimates reflect a substantial amount of transit use, ridesharing, and nonvehicular travel. Resulting net trip generation rates are about 50 percent lower than conventional trip generation rates.

Travel Patterns

Travel pattern estimates were developed from two components: estimated travel time distributions for various trip types, and estimated vehicle speed distributions for the same trip types. The travel time and vehicle speed distribution represent professional judgment based on regional land use patterns, regional transportation systems, previous analyses of travel patterns as represented by various regional traffic models, and previous analyses of data from regional and statewide travel pattern surveys.

The travel pattern estimates also recognized that the land use alternatives report prepared as part of the reuse planning process includes land use policies that encourage the development of destination facilities to attract visitors from the entire Bay Area (Objective 1, Policy 6; Objective 3, Policy 5).

Table B-28 presents the trip duration patterns used for the ozone precursor emissions analysis. The data in Table B-28 are presented graphically in Figure B-5. The corresponding speed distribution patterns are presented in Table B-29 and illustrated graphically in Figure B-5. Also included in Table B-29 is the resulting mean trip length for each trip purpose.

A limited amount of comparison information is available from travel survey data collected by Federal, state, and regional agencies. Table B-28 compares the EIS/EIR estimates for home-work trips to commute trip duration pattern data collected in the Bay Area during the 1980 census. The assumed commute trip pattern used in the EIS/EIR is shorter than the average commute trip pattern for the Bay Area. Figure B-5 provides a graphical comparison of the EIS/EIR pattern with trip duration patterns for the central portion of the Bay Area. As an additional point of comparison, Caltrans data show an average commute trip duration of 25 minutes for the Bay Area (Caltrans, 1992).

As shown in Table B-30, most of the readily available information regarding trip durations is restricted to home/work commute trips. The Federal Highway Administration has published national average trip distance estimates for a variety of trip purpose categories (Table B-31). No regional data are presented in the Federal Highway Administration report, so it is not clear how trip distances for the Bay Area compared to the national average.

Vehicle Emission Rates

A general discussion of the EMFAC7F vehicle emission rate model was presented in the discussion of carbon monoxide dispersion modeling procedures. The nature of ozone precursor emissions analysis procedures requires that EMFAC7F emission rates be based on:

- Daily, rather than peak hour, patterns of vehicle activity;
- Use-generated vehicle trips (by trip purpose categories), rather than total traffic on particular types of roadways; and
- Summer temperature patterns, rather than winter patterns.

Table B-28
Travel Time Pattern Assumptions for Alternative Reuse Plans

Trip Type		Distribution of Travel by Trip Duration Intervals										Mean Travel Time	
		Under 8 Mins.	8 - 10 Mins.	10 - 15 Mins.	15 - 20 Mins.	20 - 25 Mins.	25 - 30 Mins.	30 - 35 Mins.	35 - 40 Mins.	40 - 45 Mins.	45 - 50 Mins.	Over 50 Mins.	Time (Mins.)
H-W		10.00%	10.00%	15.00%	20.00%	12.00%	10.00%	8.00%	7.00%	4.00%	2.00%	2.00%	21.45
H-S		20.00%	25.00%	20.00%	15.00%	9.00%	5.00%	2.00%	1.00%	1.00%	1.00%	1.00%	14.45
H-O		10.00%	15.00%	20.00%	15.00%	12.00%	10.00%	7.00%	4.00%	3.00%	2.00%	2.00%	19.78
O-W		20.00%	20.00%	18.00%	15.00%	10.00%	5.00%	3.00%	3.00%	2.00%	2.00%	2.00%	16.60
O-O		15.00%	23.00%	20.00%	15.00%	10.00%	7.00%	4.00%	3.00%	1.00%	1.00%	1.00%	16.17

Source: Tetra Tech, Inc., 1996.

Notes: H-W = Home-Work trips
H-S = Home-Shopping trips
H-O = Home-Other trips
O-W = Other-Work trips
O-O = Other-Other trips

Table B-29
Travel Speed Patterns for Alternative Reuse Plans

Trip Purpose	Mean Trip Duration (Minutes)	Percent of Travel Time by Speed (MPH)					Mean Distance (Miles)
		17.5	27.5	37.5	47.5	60	
H-W	21.45	15.0%	25.0%	30.0%	25.0%	5.0%	12.74
H-S	14.45	35.0%	25.0%	20.0%	15.0%	5.0%	7.38
H-O	19.78	30.0%	25.0%	20.0%	15.0%	10.0%	10.80
O-W	16.60	15.0%	20.0%	30.0%	25.0%	10.0%	10.31
O-O	16.17	25.0%	20.0%	25.0%	20.0%	10.0%	9.37

Source: Tetra Tech, Inc., 1996.

Notes: H-W = Home-Work trips
H-S = Home-Shopping trips
H-O = Home-Other trips
O-W = Other-Work trips
O-O = Other-Other trips

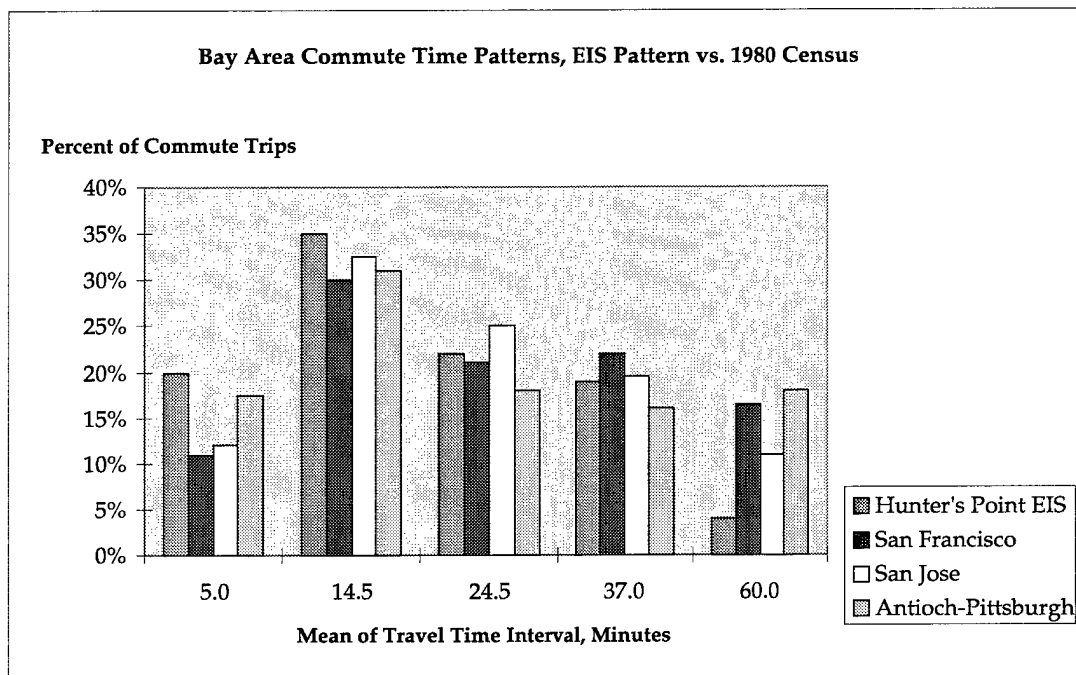
TABLE B-30
Bay Area Commute Trip Travel Time Patterns

Housing Area	Distribution of Travel by Trip Duration					Mean Travel Time (Mins.)
	Under 10 Minutes	10 - 19 Minutes	20 - 29 Minutes	30 - 44 Minutes	45 Minutes	
Hunter's Point EIS/EIR	20.00%	35.00%	22.00%	19.00%	4.00%	20.90
San Francisco-Oakland Area	11.00%	30.10%	20.70%	21.80%	16.40%	27.89
San Jose Urbanized Area	11.98%	32.58%	25.08%	19.68%	10.68%	25.16
Antioch-Pittsburg Area	17.20%	30.80%	18.30%	15.80%	17.90%	26.40
Fairfield Urbanized Area	21.60%	38.10%	12.40%	15.00%	12.90%	22.93
Napa Urbanized Area	23.80%	39.10%	12.80%	13.70%	10.60%	21.42
Santa Rose Urbanized Area	18.42%	44.12%	16.52%	9.92%	11.02%	21.65

Source: Tetra Tech, Inc., 1996.

Notes: Bay Area patterns taken from U.S. Federal Highway Administration, 1985. Bay Area patterns are based on 1980 Census data for urbanized areas. HPS commute times are composited from Table B-28 into the time period categories used for the Bay Area urbanized areas. The use of broader time intervals results in a lower estimated mean trip duration than was developed in Table B-28.

Figure B-4



Source: Tetra Tech, Inc., 1996.

Table B-31
National Average Vehicle Trip Lengths

Trip Purpose	Mean Trip Length (Miles)		
	1977	1983	1990
Work	9.2	8.6	10.9
Work-Related Business	11.9	11.3	14.0
Shopping	4.9	5.3	5.1
School/Church	6.1	5.5	7.4
Doctor/Dentist	10.8	9.8	10.5
Other Personal Business	6.7	6.5	7.2
Vacation	95.4	113.0	80.0
Visit Friends/Relatives	11.2	10.7	11.3
Pleasure Driving	15.7	19.7	20.9
Other Social/Recreational	9.1	8.7	10.1
Other	9.8	7.2	10.7
Overall Average	8.3	7.9	9.0

Source: Tetra Tech, Inc., 1996.

Notes: Data as reported by U.S. Federal Highway Administration (1991) based on in-home travel surveys conducted by the U.S. Census Bureau.

Table B-32
Vehicle Operating Mode Conditions for Alternative Reuse Plans

<i>Distribution of Travel by Trip Duration Intervals</i>											
<i>Trip Type</i>	<i>< 8 Mins.</i>	<i>8 - 10 Mins.</i>	<i>10 - 15 Mins.</i>	<i>15 - 20 Mins.</i>	<i>20 - 25 Mins.</i>	<i>25 - 30 Mins.</i>	<i>30 - 35 Mins.</i>	<i>35 - 40 Mins.</i>	<i>40 - 45 Mins.</i>	<i>45 - 50 Mins.</i>	<i>> 50 Mins.</i>
H-W	10.0%	10.0%	15.0%	20.0%	12.0%	10.0%	8.0%	7.0%	4.0%	2.0%	2.0%
H-S	20.0%	25.0%	20.0%	15.0%	9.0%	5.0%	2.0%	1.0%	1.0%	1.0%	1.0%
H-O	10.0%	15.0%	20.0%	15.0%	12.0%	10.0%	7.0%	4.0%	3.0%	2.0%	2.0%
O-W	20.0%	20.0%	18.0%	15.0%	10.0%	5.0%	3.0%	3.0%	2.0%	2.0%	2.0%
O-O	15.0%	23.0%	20.0%	15.0%	10.0%	7.0%	4.0%	3.0%	1.0%	1.0%	1.0%

Source: Tetra Tech, Inc., 1996.

Table B-33
Cumulative Trip Operating Modes (for Total Emissions Analysis)

<i>Trip Type</i>	<i>Mean Travel Time (Mins.)</i>	<i>Mean Cold Start Mode</i>	<i>Mean Hot Start Mode</i>	<i>Mean Hot Stable Mode</i>	<i>Noncat Cold Start Mode</i>	<i>Noncat Hot Start Mode</i>	<i>Catalyst Cold Start Mode</i>	<i>Catalyst Hot Start Mode</i>
H-W	21.45	48.01%	3.90%	48.09%	41.55%	10.36%	48.08%	3.83%
H-S	14.45	37.18%	33.39%	29.43%	23.72%	46.85%	37.32%	33.24%
H-O	19.78	38.44%	18.02%	43.53%	24.50%	31.97%	38.60%	17.87%
O-W	16.60	41.24%	24.84%	33.92%	26.92%	39.17%	41.39%	24.69%
O-O	16.17	18.82%	46.81%	34.36%	5.42%	60.22%	18.97%	46.67%

Source: Tetra Tech, Inc., 1996.

Notes: H-W = Home-Work trips
H-S = Home-Shopping trips
H-O = Home-Other trips
O-W = Other-Work trips
O-O = Other-Other trips

In addition to computing the proper weighted average emission rates from EMFAC7F output files, the spreadsheet version of MFAC7F included complete calculations of diurnal and multiday diurnal evaporative emissions. These calculations are normally performed by a separate computer model (BURDEN7F) when CARB prepares emission inventories.

Key input data and assumptions used for the ozone precursor analysis are discussed below.

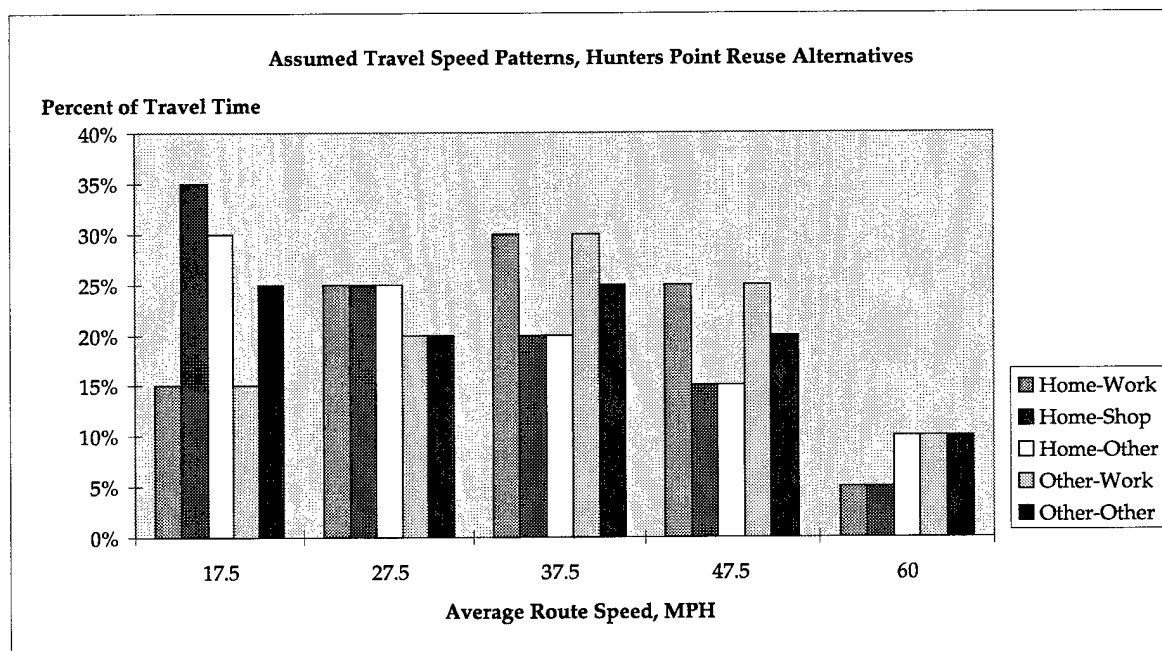
Calendar Years

Emission rates used for this EIS/EIR were for 2010 and 2020. The emission rates for 2020 were used for the buildout (2025) analyses.

Air Temperature

Exhaust emissions were calculated for a mean summer day air temperature of 68 degrees Fahrenheit (20 degrees Celsius). Evaporative emissions were calculated for a daily temperature profile that varied from a low of 55 degrees Fahrenheit (12 degrees Celsius) to a high of 80 degrees Fahrenheit (27 degrees Celsius). Intermediate temperatures used for computing diurnal emissions were: 58 degrees Fahrenheit (14 degrees Celsius) at 8 A.M., 61 degrees Fahrenheit (16 degrees Celsius) at 9 A.M., 71 degrees Fahrenheit (21 degrees Celsius) at 11 A.M., and 76 degrees Fahrenheit (24 degrees Celsius) at 1 P.M.

Figure B-5



Source: Tetra Tech, Inc., 1996.

Vehicle Mixes

Separate vehicle type mixes were used for residential, commercial, and industrial land use categories. The residential vehicle mix included 72.58 percent autos, 23.08 percent light trucks/vans, 2.29 percent medium trucks/vans, 1.03 percent gasoline-fueled heavy duty trucks, 0 percent diesel-fueled heavy duty trucks, and 1.02 percent motorcycles. The commercial vehicle mix included 68.03 percent autos, 21.64 percent light trucks/vans, 2.15 percent medium trucks/vans, 5.16 percent gasoline-fueled heavy duty trucks, 2.06 percent diesel-fueled heavy duty trucks, and 0.96 percent motorcycles. The industrial vehicle mix included 60.52 percent autos, 19.24 percent light trucks/vans, 1.91 percent medium trucks/vans, 7.2 percent gasoline-fueled heavy duty trucks, 10.28 percent diesel-fueled heavy duty trucks, and 0.85 percent motorcycles.

Vehicle Operating Modes

Table B-32 summarizes daily average vehicle operating mode conditions for the trip purpose categories use in the ozone precursor emissions analysis. As indicated by the table, the operating mode conditions were computed directly from the trip duration patterns assumed for this analysis.

Vehicle Speeds

The speed profiles assumed for each trip purpose category were presented previously in Table B-29, and shown graphically in Figure B-5.

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TABLE B-34

**NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD^a**

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
A	101	San Francisco Redevelopment Agency Sub-tenant: J. Terzian	Paints	1375	S
			Solvents	577.3	
			TPH	114.6	
			Adhesives/Sealants	98.02	
			Aerosol sprays, miscellaneous	6.8	
			Photochemical solutions	95	
			Stains, water-based	10.2	
A	110	San Francisco Redevelopment Agency Sub-tenant: J. Terzian	WD-40	0.57	S
			Paints	105.6	
			TPH	1.7	
			Photochemical solutions	34.5	
A	808	Precision Transport	TPH	272	S
A	916	Dago Mary's Restaurant	Cleaning products	37.4	S
B	103	San Francisco Redevelopment Agency Sub-tenant: J. Terzian	Paints	95.5	S
			Solvents	124.1	
			TPH	34	
			Solutions	102	
			Powder colorant	0.10	
			Fiber reactive dyes	0.57	

TABLE B-34 (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD*

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/Disposed
B	114	Smith-Emery, Co.	Solvents	27.55	S
			TPH	1,201.8	
			Acids	4.75	
			Ammonium	0.55	
			Cupric sulfate	0.45	
			Ferric chloride	0.45	
			Magnaflux magnetic powder	34	
			Sodium hydroxide	1.7	
			WD-40	6.8	
B	115	Finish Works	Solvents	27.2	S
			TPH	3.4	
			Coating/sealants	10.2	
B	116	Frame Works	Paints	74.8	S
			Solvents	41.2	
			TPH	4.5	
			Acids	0.8	
B	117	San Francisco Redevelopment Agency Sub-tenant: J. Terzian	Paints	69.7	S
			Solvents	63.05	
			TPH	27.2	
			Adhesives/sealants	5.1	
			Colorants	40	
			Xtender	27.2	

TABLE B-34 (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD^a

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
B	120	Police Athletic Club	Paints	13.6	S
			TPH	170	
			Swimming pool cleaners	15.4	
			Corrosives	17	
B	125	Bridenthall Cabinetry	Paints	12.5	S
			TPH	85	
B	128	CCSF DEA	ZEP Flash floor cleaner	17	S
C	134	Odaco, Inc.	Paints	10.2	S
			Solvents	197.2	
			TPH	309.3	
			Cleaning products	57.8	
			Refrigerant	205.7	
			Corrosives	17	
			TPH	51	
C	211	DOT, Maritime Administration	Solvents	85	S
C	230	Ernico Enterprises	TPH	425	
			Adhesives/sealants	5.1	
			K-4 Catalyst	51	
C	275	Ernico Enterprises	TPH	2,924	S
			Detergents	382.5	
			Santrol 35	187	

TABLE B-34 (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD^a

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/Disposed
C	301	Astoria Metals	TPH	694	S
			Adhesives/sealants	34	
			Antifreeze	561	
C	367	Astoria Metals	TPH	1,250	S
C	372	Astoria Metals	TPH	5,610	S
			Lead ^b	15,910	
C	Dry Dock 4 ^c	Astoria Metals	TPH	7,924	S
			Adhesives/sealants	68	
			Asbestos ^b	13,636	
D	302	Golden Gate Railroad Museum	TPH	462.3	S
			Corrosion inhibitor	374	
D	323	San Francisco Redevelopment Agency Sub-tenant: J. Terzian	Paints	34.7	S
			Solvents	13.6	
			TPH	107.2	
D	363	Quality Craftsman	Solvents	102	S
			TPH	37.3	

TABLE B-34 (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD^a

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
D	364	Young Laboratories	Solvents	6.8	S
			Paints	6.8	
			Acids	87.8	
			Ammonium	6.8	
			Ether	0.85	
			Lead	4.8	
			Potassium cyanide	0.1	
D	366	Christian Engineering	Paints	34	S
			Solvents	82.62	
			TPH	666.4	
			Heat transfer fluid	17	
			Antifreeze	10.2	
			Paints	22.84	
D	401	San Francisco Redevelopment Agency Sub-tenant: J. Terzian	Solvents	91.18	S
			TPH	268.7	
			Antifreeze	3.4	
			Paints	61.2	
			Solvents	3.4	
			TPH	10.2	

TABLE B-34 (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD^a

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/Disposed
D	401	James Heagy	Paints	6.8	S
			Solvents	106.8	
			TPH	1,090.2	
			Acids	10.2	
			Ammonia	51	
			Isopropyl alcohol	6.8	
D	401	Patricia Powers	Printing ink	3.4	S
			Paint	12.5	
			TPH	6.8	
			Solvents	151.3	
			TPH	119	
			Corrosives	104.4	
D	402	Vacant	TPH	680	S
			Paints	15	
			Solvents	30.7	
			TPH	630.9	
			Adhesives/sealants	1,710	
			Corrosives	7.6	
D	404	Mina Metals	TPH	34	S
			Paint	17	
			Solvents	28.2	
			TPH	23.8	
			TPH	34	
			Paint	17	
D	411	Eric Landsdown - The Dollhouse	Solvents	28.2	S
			TPH	23.8	
			TPH	34	
			Paint	17	
			Solvents	28.2	
			TPH	23.8	

TABLE B-34 (Continued)

**NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD^a**

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
D	411	Sierra Western Equipment	Paint	61.2	S
			TPH	2,108	
D	418	Hydro-Chem Services	Paint	10.2	S
			TPH	175.1	
D	435	San Francisco Redevelopment Agency	Paint	3.4	S
		Sub-tenant: J. Terzian	TPH	3.4	
D	435	West Edge Design	Solvents	34	S
			TPH	84.6	
D	606	San Francisco Redevelopment Agency (Police)	Solvents	2.0	S
			TPH	566.1	
			Antifreeze	13.6	
E	371	S&W Productions	Paint	6.8	S
			Solvents	3.4	
			TPH	95.2	
			Adhesives/sealants	13.6	
E	405	Clean Comp	Paint	13.6	S
			TPH	60.7	
E	406	B&A Bodywork/Towing	Paints	68	S
			Solvents	10.08	
			TPH	414.55	
E	413	American Van Lines	TPH	34	S

TABLE B-34 (Continued)

NAVY TENANT HAZARDOUS MATERIAL ACTIVITIES, 1997 TENANT SURVEY,
HUNTERS POINT SHIPYARD^a

Parcel	Building	Tenant	Hazardous Material	Estimated Quantity (kg)	Stored/Released/ Disposed
E	704	Wagner Construction	Solvents	37	S
			TPH	1,305.6	
			Antifreeze	10.2	
			Starting fluid	1.8	
E	809	Golden Gate Railroad Museum	Paints	51	S
			TPH	17,854	
			Adhesives/sealants	6.8	
			Antifreeze	10.2	
			Hydraulic fluid (fire resistant)	17	
			Starting fluid	13.6	

Source: U.S. Navy, 1998e.

Notes:

D Disposed of
kg Kilogram
R Released

S Stored
TPH Total petroleum hydrocarbons

^a Quantities of hazardous materials and TPH present at buildings were calculated based on data in U.S. Navy, 1998e, Appendix H with the following assumptions: (1) all substances listed in Appendix H are hazardous materials, (2) all hazardous materials listed in Appendix H are pure substances, and (3) all hazardous materials have been converted to kg based on 1 gallon equals 3.4 kg. Based on 1 and 2, the quantities are over estimated.

^b Hazardous material exceeds Comprehensive Environmental Response, Compensation, and Liability Act reportable quantity (Code of Federal Regulations 40 Section 302.4).

^c A review of Astoria Metals Corporation's records indicated that a diesel spill was cleaned on April 3 and 4, 1997, on the north side of Dry Dock 4. Absorbants were used to soak up the diesel and contaminated soil was removed.

^d Sometime in 1996, a spill of diesel from a 55-gallon drum on a truck occurred. The drum did not belong to the tenant. The truck was removed, but it is unknown if the release was cleaned up.

TABLE B-35

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
A	H-OS	SI-19 ^b	Building 901 (Officers Club)	Sandblast waste and oily material	No significant findings	No further action; to be released to City
A	H-48	SI-41 ^b	Buildings 816, 817, 817A, and 818	Chlorine and radioactive material	No significant findings	No further action; to be released to City
A	H-53	SI-43 ^b	Building 906 (Gardening Tool House)	Pesticides and fertilizer	Pesticides in soil; soil removed	No further action; to be released to City
A	H-53	IR-59 JAI	Former residential lot	Sandblast waste and pesticides	Soil removed	No further action; to be released to City
A	H-49 to H-57	IR-59	Parcel A groundwater investigation	Motor oil	No significant findings	No further action; to be released to City
A	S-47	SI-77 ^b	UST S-812 at Building 813	Fuels	No significant findings	No further action; to be released to City
B	N-7	SI-31	Building 114 ^d	Sandblast waste and radioactive material	No significant findings	No further action; to be released to City
B	N-10	IR-06	Building 111 ^d and 112 ^d and Tank Farm with ASTs	Diesel fuel, lubricating oil, and stoddard solvent	Metals, VOCs, PAHs, PCBs, TPH-d, and TOG detected in soil and groundwater	Soil remediation by excavation
B	N-2, N-3, N-6, and N-OS	IR-07	Sub-base Area and Radiation Site	Diesel fuel, paint, solvents, sandblast waste, waste oil, and radioactive fill material	Potential radiation issue; PAHs, TPH-d, and TOG detected in soil; and TPH in groundwater	Soil remediation by excavation
B	N-8 and N-11	IR-10	Building 123 (Battery and Electroplating Shop)	Waste acids (with metals)	Waste acids in storm drains; cyanide in landfills; heavy metals in floor drains; and VOCs detected in soil and groundwater	Soil remediation by excavation

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
B	N-1, N-2, and N-3	IR-18	Waste Oil Disposal Site (Dago Mary's) and Triple A Sites	Waste oil and radioactive fill material	Potential radiation issue; waste oil contamination and metals and TOG in soil and groundwater	Soil remediation by excavation
B	N-12 and N-15	IR-20	Building 156	Unknown chemicals and reclaimed oil	Cracked and stained asphalt, fluid and sludge in sump, unidentified pond-like feature, PCBs and TPH-g in soil, and metals and TOG in groundwater	Soil remediation by excavation
B	N-5, N-6, and N-OS	IR-23	Buildings 144, 146, 161, and 162; Radiation Site (Building 146); UST S-136 at Building 118; and SA-77 (Building 144)	Fuels, oils, paint resins, other unknown chemicals, and radioactive material	Spillage of oil and diesel in storm drains and metals, PAHs, pesticides and PCBs, and TOG in shallow soil	Soil remediation by excavation
B	N-9, N-11, N-12, N-16, and N-OS	IR-24	Buildings 124(d), 125, 128, 130, 131, and 159	Acids, various chemicals, solvents, PCBs, and paint	Various chemicals including VOCs, methyl ethyl ketone, and hydrocarbons stored on a portion of the site; poor housekeeping identified; low levels of VOCs, PAHs, PCBs, and TOG detected in soil; and TPH-d detected in groundwater	Soil remediation by excavation
B	N-14, N-15, and N-16	IR-26	Building 157 and Area XIV (area north of Dry Dock 3)	Oils, paint, sandblast waste, PCBs, and asbestos	Oily sludge and staining, a transformer, and storm drain sediments identified; sandblast material and asbestos suspected; and metals, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil	One small area of soil remediation requiring excavation present

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
B	N-7 and N-10	IR-42	Buildings 109, 113, and 113A and Radiation Site (Buildings 113 and 113A)	Oil and grease	Oil and grease, pitted floor stains, and possible buried tank identified	Soil remediation by excavation
B	Parcel-Wide	IR-46	Fuel Distribution Lines/Tank Farm (utility investigation)	Diesel fuel and lubricating oil	Metals, VOCs, PAHs, PCBs, and TPH detected in soil beneath the fuel lines	Removal of fluids from lines and removal of lines
B	N-OS	IR-60	SA-76 (Dry Docks 5, 6, and 7)	Sandblast waste, paint, and fuel	Degraded asphalt and concrete observed at the site	Clean utility and operating vault and soil remediation by excavation
B	N-6	IR-61	SA-79 (Building 122)	Lubricating oil, transformer oil, and battery acids	Potential oil and grease, PCBs, and acid contamination	Soil remediation by excavation
B	N-4 and N-5	IR-62	SA-82 (Buildings 115 and 116) and UST S-135 at Building 116	Hydraulic fluid, oils, glues, and stains	Machine shop, transformer substation, blower apparatus, and an UST at the site	No further action
C	N-11	IR-25	Building 134	Sludge, oil, and solvents	Oil and corrosive materials identified on floor and under machines; sumps, drums, dip tanks, and machines are of concern; VOCs, PAHs, pesticides, TOG, TPH-d, and motor oil detected in soil	Soil remediation by excavation and groundwater remediation
C	N-21	IR-27	Building 205 and USTs S-214 and HPA-06 at Building 205	Lubricating oil, dielectric fluid, and asbestos	Asbestos, petrochemicals, lead oil and dielectric fluids identified and TOG detected in the pump chamber water sample	Removal and disposal of pump chamber water to POTW; no further action

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
C	N-19, N-20, N-22, N-24, N-25, N-26, and N-03	IR-28	Buildings 211/253, 214, 218, 219, 224, 228, 229, 230, 231, 251, 252, 258, 270, 271, and 281; UST HPA-01 (Building 211); USTs HPA-02, HPA-03, HPA-04, HPA-05, S-001, S-002, S-003, and S-004 (Building 253); UST HPA-07 (Building 272); USTs HPA-10, HPA-11, HPA-12, HPA-16, HPA-17 (Building 231), HPA-33 (Building 281), and HPA-34 (Building 281); UST S-215 (Building 271); USTs S-219 and S-251 (Building 251); and SA-94 (Building 251), SA-99 (Building 230), SA-100 (Building 281), SA-101 (Building 273), SA-102 (Building 270), SA-103 (Building 271), and SA-111 (Building 229)	Fuels, oil, paint, solvents, PCBs, sandblast waste, other unknown chemicals, and radioactive material	Potential radiation issue; staining, oil releases; metals, VOCs, PAHs, pesticides and PCBs, TPH-d, and TOG detected in soil; and metals, VOCs, and PAHs detected in groundwater	Soil remediation by excavation and groundwater remediation
C	N-18, N-23, and N-26	IR-29	Buildings 203, 217, 275, 279(d), 280, and 282	Fuel, oil, acid, paint, unknown chemicals, aluminum oxide, and sandblast waste	VOCs, PAHs, pesticides and PCBs, TPH-d, and TOG detected in soil and storm drain sediments; UST sites; soil discoloration; photo and paint residues; possible leakage to storm drains of metals, particulates, and sandblast materials; and VOCs identified in groundwater	Soil remediation by excavation

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
C	N-18	IR-30	Building 241	Oil and asbestos	Stained and discolored soil, oozing oil and asbestos, potentially contaminated unlined utility trench, and metals and VOCs in soil	There are no planned remedial actions
C	S-27	IR-57	Dry Dock 4 Area	Oil, PCBs, and sandblast waste	Sandblast materials, oil staining from transformers, and metals, PAHs, PCBs, and TOG detected in storm drain sediments	Soil remediation by excavation
C	N-13 and N-14	IR-58	Scrap Yard (north of Building 258)	Oil and miscellaneous debris	Oil stains on soil; miscellaneous debris may contain oil, leaking lead acid batteries, and other leaking materials; metals, VOCs, PAHs, pesticides and PCBs, TPH-d, and TOG detected in soil; and VOCs and pesticides detected in storm drain sediments	Soil remediation by excavation and groundwater remediation
C	N-18	IR-63	SA-89 (Building 278 ^d)	Unknown	The former building may have been a possible paint storage location	There are no remedial actions planned
C	N-14 and N-21	IR-64	SA-90 (Building 206)	Transformer oil and batteries	Building is clean except for debris around outside; big oily area or stained area not observed	Soil remediation by excavation
D	S-O5	IR-16	Container Storage Area	PCBs and unknown chemicals	Low levels of metals and hydrocarbons identified and miscellaneous chemicals identified	RI activities to verify sample quality
D	S-41	IR-48 ^b	Suspected Steam Lines at former Building 503	Waste oil and PCBs	The suspected steam lines did not exist according to SI field investigation	No further action

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
D	S-41 and S-42	IR-08	Former Building 503 (now Building 606) PCB Spill Area	PCBs	On-site transformers likely sources; metals, VOCs, SVOCs, TPH-d, and TOG detected in soil; and PAHs detected in groundwater	No further action
D	S-29	IR-09	Pickling and Plate Yard	Acids	Containment vault, storm drains, and pickling tanks; potential sanitary sewer contamination; lead, PAHs, and TPH-d detected in soil; and lead and PAHs detected in groundwater	Soil remediation by excavation
D	S-OS	IR-16	Container Storage Area	PCBs from drums, oil rags, transformers, and flammable chemicals	Metals, SVOCs, PCBs, and TRPH in soil	Soil remediation by excavation
D	S-OS	IR-17	Drum Storage and Disposal Site	Industrial debris	Minor staining and debris and metals in soil and groundwater	There are no remedial actions planned
D	S-27	IR-22	Buildings 308, 368, and 369 and UST HPS-308 at Building 308	Fuels, oil, sandblast waste, and asbestos	Metals in soil and metals, VOCs, and PCBs in groundwater	There are no remedial actions planned
D	S-27 and S-43	IR-32 ^b	Building 383 and Regunning Pier	Radioactive material	No significant findings	No further action
D	S-28, S-29, S-38, and S-39	IR-33	Buildings 302, 303, 304, 364, 411, and 418; USTs S-304 and S-305 at Building 304; Radiation Sites (Building 364 and 365); and SA-116 (Buildings 417, 418, and 424) and SA-125 (Building 365)	Fuels, oils, paint solvents, unknown chemicals, acids, sandblast waste, and radioactive material	Potential radiation issue; metals, VOCs, PAHs, PCBs, TPH, and TOG detected in soil, floor drain, and sump sediments; PCBs and TPH-g detected in storm drain sediments; and lead detected in groundwater	Soil remediation by excavation

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
D	S-28 and S-39	IR-34	Buildings 351, 351A, and 366 and Radiation Site (Building 351A)	Acid, oils, unknown chemicals, and radioactive material	Lead and VOCs detected in storm drain sediments; PCBs and VOCs detected in shallow soil; and potential radiation issue	Soil remediation by excavation
D	S-27	IR-35	Buildings 274, 306, 313 ^d , 313A ^d , 322, and 372 and area bounded by Manseau, Moreell, and "E" Streets (south of Dry Dock 4) and Radiation Site (Buildings 274, 313 ^d , and 313A ^d)	Unknown chemicals, PCBs, sandblast waste, and radioactive material	Oil staining, PCB leaks, and potential radiation issue; metals, PAHs, and PCBs detected in floor drain sediments and surface soil; and high metal levels in sandblast materials	Soil remediation by excavation
D	S-30	IR-37	Buildings 401, 435, 436, and 437; USTs S-435(1) and S-435(2) at Building 435; and SA-117 (Building 437)	Paint, solvents, and unknown chemical(s)	PCBs and TOG in surface soil samples and metals, VOCs, and pesticides and PCBs detected in storm drain sediments	There are no remedial actions planned
D	S-38	IR-44 ^b	Area near Buildings 408, 409, 410(d), and 438 and SA-126 (Building 438)	Sandblast waste	Sandblast materials and debris, metals in storm drain sediments, and PAHs in sandblast waste sample	There are no remedial actions planned
D	S-OS	IR-53	Buildings 525 and 530	Oil, fuel, adhesives, paint, and unknown chemicals	Oil and/or possible chemical staining and metals, PAHs, PCBs, and TOG detected in soil	Soil remediation by excavation
D	S-43	IR-55	Building 307	Oil and unknown hazardous material	Oil leaks and soaking, underground vaults, and metals, PAHs, and TOG detected in soil	Soil remediation by excavation
D	S-39	IR-65	SA-123 (Building 324)	Carbon dioxide cylinders	Potential PCBs and chlorine contamination	There are no remedial actions planned

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
D	S-30 and S-37	IR-66	SA-127 (Building 407)	None	Gravel yard in the north of building is used for truck maintenance, storage, and parking and minor oil staining found	There are no remedial actions planned
D	S-37	IR-67	SA-128 (Building 439)	Metals, acids, and paints	A PCB drum and possible USTs and dry wells	There are no remedial actions planned
D	S-27	IR-68	Buildings 374, 376, 378, 379, and 382 and SA-131 (Building 378)	Diesel	A 10,000-gallon aboveground fuel tank on the north side of generator shed providing fuel for the engine; surface staining on platform and exposed soil inside shed	There are no remedial actions planned
D	S-OS	IR-69	SA-134 (Building 523) and SA-135 (metal shed near Building 523)	PCBs and lubricating oil	Electrical equipment contaminated by PCBs	There are no remedial actions planned
D	S-43	IR-70	SA-137 (area northeast of Building S-308)	Possible sandblast material	Stains on floor and trash and sand around building	Soil remediation by excavation
D	S-39	IR-71	SA-140 (Crane Storage Yard at corner of Manseau and Moreell Streets)	Lubricating oil and fuel	Stains in soil	There are no remedial actions planned
E	S-OS	IR-40 ^b	Building 527 and Pier 2	PCBs	No significant findings	No further action
E	S-OS	IR-47 ^b	Fuel Distribution Lines for AST S-505	Diesel fuel and oil	Oil identified in lines	Remove oil and lines
E	S-34, S-45, and S-OS	IR-01/21	Industrial Landfill and area southwest of Building 810	Solvents, metals, VOCs, SVOCs, and PCBs	Metals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil and metals, VOCs, and PCBs detected in groundwater	Soil remediation by capping and groundwater remediation

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
E	3-34, S-35, S-44, and S-OS	IR-02	Bay Fill Area, Burn Disposal Area, and AST S-505 excluding IR-03 Radiation Site	Industrial debris, drums, paint containers, asphalt, asbestos, sandblast waste, waste oil and oil containing PCBs, and other unknown liquid waste	Possible groundwater migration into Bay; potential radiation issue; metals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil; and metals, VOCs, and PCBs detected in groundwater	Soil remediation by capping and groundwater remediation
E	S-OS	IR-03	Former Oil Reclamation Ponds	Oil, unknown liquid wastes, and sandblast waste	Waste oil in upper aquifer identified; metals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil; and metals, VOCs, and PCBs detected in groundwater	Soil remediation by excavation and groundwater remediation
E	S-45 and S-46	IR-04	Building 807 (Scrap Yard Shed)	Capacitors, scrap metal (lead and copper), drums, asbestos, batteries, and other unknown liquid wastes	No significant findings	Soil remediation by excavation
E	S-32 and S-33	IR-05	Old Transformer Storage Yard	Batteries (containing acids and metals) and PCBs	Metal residues, PCBs, and oils releases	There are no remedial actions planned
E	S-44	IR-11	Building 521 (Power Plant) and SA-142 (Building 521)	Solvents, paint, asbestos, fuel, and transformer oil	Asbestos, solvents, paints, PCBs, and leaking drum in Building 521; metals and PCBs detected in soil; and TPH detected in groundwater	Soil remediation by excavation
E	S-32, S-33, and S-34	IR-12	Disposal Trench and Salvage Yard (Building 702 ^d)	Oil, acids, bases, solvents, LBP, paint containers, sludge, and other unknown wastes	Oil and liquid chemical contamination; staining; meals, VOCs, PAHs, PCBs, TPH-g, TPH-d, and TOG detected in soil; and VOCs, PAHs, TPH-g, TPH-d, and TOG detected in groundwater	Soil remediation by excavation

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
E	S-35	IR-13	Old Commissary Site (former Buildings 524 ^d and 803 ^d)	Fuels, oils, PCBs, and miscellaneous waste	Potential contamination from drums, waste piles, and transformers; metals and PCBs detected in soil; and metals in groundwater	Soil remediation by excavation
E	S-40, S-41, and S-44	IR-14	Oily Liquid Waste Disposal Site and Buildings 506 ^d , 510 ^d , 510A ^d , 518, and 529 ^d	Oil, mixed waste, miscellaneous debris, sandblast waste, and radioactive material	Oil, mixed waste, sandblast waste, staining, sludge, and debris identified; metals in groundwater; and potential radiation issue	Soil remediation by excavation and groundwater remediation
E	S-44	IR-15	Oily Waste Ponds and Incineration Tank	Waste oil and miscellaneous debris	No surficial oil pond or incinerator tank remaining; disposal site for oil and debris; PAHs, TPH-g, TPH-d, and TOG detected in soil; and metals, VOCs, SVOCs, TPH-g, TPH-d, TOG detected in groundwater	Soil remediation by excavation and groundwater remediation
E	S-30, S-31, S-32, S-35, and S-36	IR-36	Buildings 371, 400, 404A, 405, 406, 413, 414, 704, 709, and 710 and area west of Building 405; USTs HPA-14, HPA-15, S-711, S-712, S-713, S-714, and S-715 at Building 709	Oils, PCBs, solvents, unknown chemicals, and miscellaneous debris	Miscellaneous debris, scrap metal, PCBs, and leaking equipment; staining and poor housekeeping; VOCs, SVOCs, PCBs, TPH-g, and metals in soil; and VOCs, SVOCs, TPH-g, and TOG in groundwater	Soil remediation by excavation
E	S-OS	IR-52	Railroad right-of-way (off-site west of facility)	Paint, resins, oil, and miscellaneous debris	Soil staining and random waste dumping; potential chemical treatment of lumber and railroad ties; and metals, PCBs, and TOG detected in soil	Removal of rubbish along right-of-way, cap with asphalt, and restrict access
E	S-44	IR-54 ^b	Building 511A(d)	Miscellaneous debris	No significant findings	No further action

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
E	S-45	IR-56	Area VII and Railroad Tracks	Pentachlorophenol (wood preservative)	Metals, VOCs, and PAHs detected in soil	Soil remediation by excavation
E	S-45	IR-72	SA-146 (Building 810) and UST S-801 and S-802 at Building 811	Solvents, acids, greases, soil cuttings, and cleaning agents	Hydrocarbon material stored at the site and spills and leaks observed	Soil remediation by excavation
E	S-OS	IR-73	SA-150 (asphalt batch plant northwest of Pier 2)	Diesel fuel and asphalt stock	Stained and damaged asphalt	There are no remedial actions planned
D and E	S-40, S-41, S-42, and S-44	IR-38 ^b	Buildings 500, 506 ^d , 507 ^d , 509 ^d , 510 ^d , and 517 ^d ; UST S-508 at Building 500; and Radiation Sites (Buildings 506 ^d , 507 ^d , 508 ^d , 509 ^d , 510 ^d , and 517 ^d)	Building 500: none All other buildings: radioactive material	Potential radiation issue and metals and TOG detected in soil	Soil remediation by excavation
D and E	S-35 and S-40	IR-39	Buildings 505, 519 ^d , 707, 708, and IR-13 sites and Radiation Site (Buildings 707 and 708)	Unknown chemicals and radioactive material	Potential radiation issue and PCBs, TPH-g, TPH-d, and TOG detected in soil	Remediation at Building 707 Concrete Pad (radiation)
A, B, C, D, and E	NA	IR-45 ^b	Steam Lines (utility investigation)	Waste oils	Fluids in lines to be removed	Remove or abandon in place
B and C	N-21 and N-23	IR-49	Fuel Distribution Lines at Buildings 203 and 205 (utility investigation)	Fuel and fuel oils	Lines contained fuel and other fluids	Removal of fuel lines or abandon in place
B, C, D, and E	NA	IR-50	Storm Drains and Sanitary Sewer Lines (utility investigation)	Unknown	Contaminants in sediments in storm drain catch basin	Remove sediments
A	NA	SI-50 ^b	Storm Drains and Sanitary Sewer Lines (utility investigation)	Unknown	Contaminants in sediments in storm drain catch basin	Remove sediments
B, C, D, and E	NA	IR-51	Former Transformer Sites	PCBs	Stained soil in Parcels B and C	Remove transformer or abandon in place
A	NA	SI-51 ^b	Former Transformer Sites	PCBs	No evidence of stained soil or leaking from existing equipment	Remove transformer or abandon in place

TABLE B-35 (continued)

**SUMMARY OF INSTALLATION RESTORATION PROGRAM SITES AT
HUNTERS POINT SHIPYARD^a**

Parcel	Sub-Parcel	IRP Site	Description	Suspected Material Used and/or Disposed of at Site	Findings	Final Recommendation
F	NA	IR-78	Underwater portion of HPS (includes tidal and subtidal areas)	Metals, PAHs, SVOCs, and pesticides and PCBs	Contaminants were found in off-shore sediments	Recommendations presented in FS
FUDS	Not in HPS boundary	IR-74 ^c	Radiation site (Building 815, a FUDS)	None - radiation clearance needed for Building 815	Not yet performed	Further investigation may be required
FUDS	Not in HPS boundary	IR-75 ^c	Radiation site (Building 820, a FUDS)	None - radiation clearance needed for Buildings 820	Not yet performed	Further investigation may be required
FUDS	Not in HPS boundary	IR-76	Area surrounding Buildings 830 and 831 (FUDS) and radiation site (Buildings 830 and 831)	None - radiation clearance needed for Buildings 830 and 831	Not yet performed	Soil remediation by excavation

Source: U.S. Navy, 1998e

Notes:

AST Aboveground storage tank
 CITY City of San Francisco
 ERA Ecological risk assessment
 FS Feasibility study
 FUDS Formerly used defense sites
 HPS Hunters Point Shipyard
 IRP Installation Restoration Program
 LBP Lead-based paint

^a All sites in Table B-35 are being evaluated under the HPS IRP.

Designation of a site as "Installation restoration (IR)" indicates that a site has undergone preliminary assessment (PA) and SI level investigation under the Comprehensive Environmental Response, Compensation, and Liability Act process. The site has been recommended for further investigation at the RI level. The recommendation is based on the detected presence of contamination by hazardous substances and the need to adequately characterize its nature and extent of contamination.

Radiation sites, with the exception of IR-02, IR-07, and IR-18, are all at the SI level of investigation and may be listed within an IR site geographic limits.

FUDS, including sites resulting from the base-wide facility audit, are not included in this table.

^b Designation of a site as "SI" denotes that site has undergone PA and SI level investigation. No further investigation to define nature and extent of contamination is recommended.

^c Radiation sites which have undergone PA and are proposed for SI level investigation to determine if release of radioactive materials has occurred and characterization is necessary.

^d The building has been demolished.

TABLE B-36: PLANT SPECIES

The plant species below have all been detected at Hunters Point and within the ROI.

COMMON NAME	SCIENTIFIC NAME
sand verben*	<i>Abronia maritima</i>
Sydney golden	<i>Acacia longifolia</i>
acacia*	<i>Acacia</i> sp.
yarrow*	<i>Achillea millefolium</i>
century plant	<i>Agave americana</i>
plume acacia	<i>Albizia lophantha</i>
aloe	<i>Aloe</i> sp.
beach bur*	<i>Ambrosia chamissonis</i>
scarlet pimpernel*	<i>Anagalis arvensis</i>
fat hen	<i>Atriplex hastata</i>
beach saltbush	<i>Atriplex leucophylla</i>
Australian saltbush	<i>Atriplex semibaccata</i>
slender wild oat*	<i>Avena barbata</i>
coyote brush*	<i>Baccharis pilularis</i>
bellardia*	<i>Bellardia trixago</i>
garden beet	<i>Beta vulgaris</i>
mustard*	<i>Brassica</i> sp.
ripgut grass*	<i>Bromus diandrus</i>
soft chess	<i>Bromus hordeaceus</i>
red brome*	<i>Bromus madritensis</i> ssp. <i>rubens</i>
sea rocket*	<i>Cakile maritima</i>
bottlebrush	<i>Callistemon</i> sp.
Italian thistle	<i>Carduus pycnocephalus</i>
fig-marigold*	<i>Carpobrotus edulis</i>
yellow star thistle*	<i>Centaurea solstitialis</i>
Indian soap plant	<i>Chlorogalum pomeridianum</i>
chicory	<i>Cichorium intybus</i>
horseweed*	<i>Conyza</i> sp.
pampas grass*	<i>Cortaderia</i> sp.
cotoneaster	<i>Cotoneaster</i> sp.
cypress*	<i>Cupressus</i> sp.
dodder*	<i>Cuscuta</i> sp.
Bermuda grass*	<i>Cynodon dactylon</i>
saltgrass*	<i>Distichlis spicata</i>
dragon tree	<i>Dracena draco</i>
willow herb	<i>Epilobium brachycarpum</i>
coast buckwheat	<i>Eriogonum latifolium</i>
red-stem filaree*	<i>Erodium cicutarium</i>
filaree*	<i>Erodium</i> sp.
California poppy*	<i>Eschscholzia californica</i>
blue gum	<i>Eucalyptus globulus</i>
Australian beech	<i>Eucalyptus polyanthemos</i>
perennial fescue	<i>Festuca</i> sp.
sweet fennel*	<i>Foeniculum vulgare</i>
geranium*	<i>Geranium dissectum</i>
dove-leaved geranium	<i>Geranium molle</i>
cudweed*	<i>Gnaphalium</i> sp.
broom*	<i>Grenista monspessulanus</i>
Great Valley gumplant*	<i>Grindelia camporum</i>
English ivy	<i>Hedera helix</i>
toyon	<i>Heteromeles arbutifolia</i>
telegraph weed	<i>Heterotheca grandiflora</i>
summer mustard*	<i>Hirschfeldia incana</i>
Mediterranean barley	<i>Hordeum marinum</i> var. <i>gussoneanum</i>
foxtail barley	<i>Hordeum</i> sp.

TABLE B-36: PLANT SPECIES (Continued)

COMMON NAME	SCIENTIFIC NAME
rough cat's-ear	<i>Hypochaeris radicata</i>
rush	<i>Juncus</i> sp.
Juniper	<i>Juniperus</i> sp.
tree mallow	<i>Lavatera arborea</i>
western marsh-rosemary	<i>Limonium californicum</i>
sweet alyssum	<i>Lobularia maritima</i>
Italian ryegrass*	<i>Lolium multiflorum</i>
birdsfoot trefoil	<i>Lotus corniculatus</i>
silver bush lupine	<i>Lupinus albifrons</i>
loosestrife	<i>Lythrum hyssopifolium</i>
cheeseweed*	<i>Malva</i> sp.
California burclover	<i>Medicago polymorpha</i>
white sweetclover*	<i>Melilotus alba</i>
myoporum	<i>Myoporum lactum</i>
purple needlegrass	<i>Nassella pulchra</i>
tune, Nopal	<i>Opuntia tuna</i>
Bermuda buttercup*	<i>Oxalis pes-caprae</i>
phacelia	<i>Phacelia</i> sp.
Canary Island date palm	<i>Phoenix canariensis</i>
bristly ox-tongue	<i>Picris echioides</i>
pine	<i>Pinus</i> sp.
cut-leaved plantain	<i>Plantago coronopus</i>
narrow-leaved plantain*	<i>Plantago lanceolata</i>
London plane	<i>Platanus acerifolia</i>
common knotweed	<i>Polygonum arenastrum</i>
California polypody	<i>Polypodium californicum</i>
annual beardgrass	<i>Polypogon monspeliensis</i>
lombardy poplar	<i>Populus nigra</i> var. <i>italica</i>
cherry plum	<i>Prunus cerasifera</i>
holly-leaf cherry	<i>Prunus ilicifolia</i>
fire-thorn	<i>Pyracantha angustifolia</i>
cork oak	<i>Quercus suber</i>
wild radish*	<i>Raphanus sativus</i>
Himalaya blackberry*	<i>Rubus discolor</i>
curly dock*	<i>Rumex crispus</i>
fiddle dock	<i>Rumex pulcher</i>
pickleweed*	<i>Salicornia virginica</i>
arroyo willow	<i>Salix lasiolepis</i>
Russian thistle	<i>Salsola tragus</i>
pincushion flower	<i>Scabiosa atropurpurea</i>
milk thistle	<i>Silybum marianum</i>
prickly sow thistle*	<i>Sonchus asper</i>
salt marsh sand spurrey	<i>Spergularia marina</i>
tamarisk	<i>Tamarix</i> sp.
New Zealand spinach	<i>Tetragonia tetragonioides</i>
rose clover*	<i>Trifolium hirtum</i>
garden nasturtium	<i>Tropaeolum majus</i>
cattail	<i>Typha</i> sp.
annual fescue	<i>Vulpia</i> sp.
Spanish dagger	<i>Yucca mohavensis</i>

Source: U.S. Navy, 1995c; City and County of San Francisco, Planning Department, 1994a.

* = Species observed during 1995 sensitive species survey of HPS (U.S. Navy, 1995c).

TABLE B-37: AVIAN SPECIES

Bird species included in this list are those that potentially inhabit HPS and the ROI. Those detected during surveys of HPS or observed by local residents are noted.

COMMON NAME	SCIENTIFIC NAME
Cooper's hawk	<i>Accipiter cooperi</i>
sharp-shinned hawk ^{2*}	<i>Accipiter striatus</i>
spotted sandpiper	<i>Actitis macularia</i>
Clark's grebe ²	<i>Aechmophorus clarkii</i>
western grebe ²	<i>Aechmophorus occidentalis</i>
white-throated swift	<i>Aeronautes saxatalis</i>
red-winged blackbird ^{1,2*}	<i>Agelaius phoeniceus</i>
tricolored blackbird ²	<i>Agelaius tricolor</i>
wood duck	<i>Aix sponsa</i>
green-winged teal	<i>Anas carolinensis</i>
northern shoveler	<i>Anas clypeat</i>
cinnamon teal	<i>Anas cyanoptera</i>
Mallard	<i>Anas platyrhynchos</i>
Gadwall	<i>Anas strepera</i>
American pipit	<i>Anthus spinoletta</i>
scrub jay ^{2*}	<i>Aphelocoma coerulescens</i>
golden eagle *	<i>Aquila chrysaetos</i>
great blue heron ^{2*}	<i>Ardea herodias</i>
ruddy turnstone ²	<i>Arenaria interpres</i>
black turnstone ²	<i>Arenaria melanocephala</i>
short-eared owl	<i>Asio flammeus</i>
long-eared owl	<i>Asio otus</i>
lesser scaup ^{1,2*}	<i>Aythya affinis</i>
ring-necked duck	<i>Aythya collaris</i>
greater scaup ^{1,2*}	<i>Aythya marila</i>
Canvasback *	<i>Aythya valisineria</i>
cedar waxwing ^{2*}	<i>Bombycilla cedrorum</i>
American bittern	<i>Botaurus lentiginosus</i>
Canada goose *	<i>Branta canadensis</i>
great horned owl	<i>Bubo virginianus</i>
bufflehead ²	<i>Bucephala albeola</i>
common goldeneye ²	<i>Bucephala clangula</i>
Barrow's goldeneye ²	<i>Bucephala islandica</i>
red-tailed hawk *	<i>Buteo jamaicensis</i>
ferruginous hawk *	<i>Buteo regalis</i>
Swainson's hawk *	<i>Buteo swainsoni</i>
green-backed heron	<i>Butorides stratus</i>
sanderling ²	<i>Calidris alba</i>
dunlin ²	<i>Calidris alpina</i>
western sandpiper	<i>Calidris mauri</i>
least sandpiper ²	<i>Calidris minutilla</i>
California quail *	<i>Callipepla californica</i>
Anna's hummingbird ^{1,2*}	<i>Calypte anna</i>
Wilson's snipe ²	<i>Capella gallinago</i>
house finch ^{1,2*}	<i>Carpodacus mexicanus</i>
purple finch	<i>Carpodacus purpureus</i>
great egret ²	<i>Casmerodius albus</i>
turkey vulture *	<i>Cathartes aura</i>

TABLE B-37: AVIAN SPECIES (Continued)

COMMON NAME	SCIENTIFIC NAME
varied thrush	<i>Catharus guttatus</i>
Swainson's thrush	<i>Catharus ustulatus</i>
brown creeper	<i>Certhia americana</i>
belted kingfisher	<i>Ceryle alcyon</i>
semipalmated plover	<i>Charadrius semipalmatus</i>
killdeer ^{1,2}	<i>Charadrius vociferus</i>
lark sparrow	<i>Chondestes grammacus</i>
northern harrier	<i>Circus cyaneus</i>
marsh wren	<i>Cistothorus palustris</i>
northern flicker ^{2*}	<i>Colaptes auratus</i>
band-tailed pigeon	<i>Columba fasciata</i>
rock dove ^{1,2}	<i>Columba livia</i>
olive-sided flycatcher	<i>Contopus borealis</i>
western wood pewee	<i>Contopus sordidulus</i>
American crow ^{1,2}	<i>Corvus brachyrhynchos</i>
common raven ^{2*}	<i>Corvus corax</i>
Steller's jay [*]	<i>Cyanocitta stelleri</i>
yellow-rumped warbler ²	<i>Dendroica coronata</i>
snowy egret ^{2*}	<i>Egretta thula</i>
black-shouldered kite	<i>Elanus leucurus</i>
Pacific slope flycatcher	<i>Empidonax difficilis</i>
horned lark	<i>Eremophila alpestris</i>
Brewer's blackbird ^{1,2}	<i>Euphagus cyanocephalus</i>
Merlin	<i>Falco columbarius</i>
American peregrine falcon ^{2*}	<i>Falco peregrinus anatum</i>
American kestrel ^{2*}	<i>Falco sparverius</i>
American coot ^{2*}	<i>Fulica americana</i>
common moorhen	<i>Gallinula chloropus</i>
common loon ²	<i>Gavia immer</i>
common yellowthroat	<i>Geothlypis trichas</i>
bald eagle	<i>Haliaeetus leucocephalus</i>
black-necked stilt	<i>Himantopus mexicanus</i>
barn swallow [*]	<i>Hirundo rustica</i>
hooded oriole [*]	<i>Icterus cucullatus</i>
northern oriole	<i>Icterus galbula</i>
tree swallow	<i>Iridoprocne bicolor</i>
dark-eyed junco ²	<i>Junco hyemalis</i>
loggerhead shrike ²	<i>Lanius ludovicianus</i>
herring gull ^{1,2}	<i>Larus argentatus</i>
California gull ^{1,2*}	<i>Larus californicus</i>
mew gull ²	<i>Larus canus</i>
ring-billed gull ^{2*}	<i>Larus delawarensis</i>
glaucous-winged gull ²	<i>Larus glaucescens</i>
Heerman's gull	<i>Larus heermanni</i>
western gull ^{1,2*}	<i>Larus occidentalis</i>
Thayer's gull	<i>Larus thayeri</i>
long-billed dowitcher [*]	<i>Limnodromus scolopaceus</i>
marbled godwit	<i>Limosa fedoa</i>
American widgeon [*]	<i>Mareca americana</i>
acorn woodpecker	<i>Melanerpes formicivorus</i>

TABLE B-37: AVIAN SPECIES (Continued)

COMMON NAME	SCIENTIFIC NAME
Lewis' woodpecker	<i>Melanerpes lewis</i>
surf scoter ^{2*}	<i>Melanitta perspicillata</i>
Lincoln's sparrow	<i>Melospiza lincolnii</i>
song sparrow ^{2*}	<i>Melospiza melodia</i>
red-breasted merganser	<i>Mergus serrator</i>
northern mockingbird ^{1,2*}	<i>Mimus polyglottos</i>
brown-headed cowbird	<i>Molothrus ater</i>
ash-throated flycatcher	<i>Myiarchus cinerascens</i>
long-billed curlew ¹	<i>Numenius americanus</i>
whimbrel ²	<i>Numenius phaeopus</i>
willet ^{2*}	<i>Numenius phaeopus</i>
black-crowned night heron *	<i>Nycticorax nycticorax</i>
western screech owl *	<i>Otus asio</i>
ruddy duck ^{2*}	<i>Oxyura jamaicensis</i>
plain titmouse	<i>Parus inornatus</i>
chestnut-backed chickadee	<i>Parus rufescens</i>
house sparrow ^{1,2}	<i>Passer domesticus</i>
savannah sparrow ²	<i>Passerculus sandwichensis</i>
fox sparrow	<i>Passerella iliaca</i>
Lazuli bunting	<i>Passerina amoena</i>
American white pelican	<i>Pelicanus erythrorhynchos</i>
California brown pelican ^{2*}	<i>Pelicanus occidentalis</i>
cliff swallow ¹	<i>Petrochelidon pyrrhonota</i>
double-crested cormorant ^{1,2,*}	<i>Phalacrocorax auritus</i>
black-headed grosbeak	<i>Pheucticus melanocephalus</i>
Nuttall's woodpecker	<i>Picoides nuttalli</i>
downy woodpecker	<i>Picoides pubescens</i>
hairy woodpecker	<i>Picoides villosus</i>
rufous-sided towhee	<i>Pipilo erythrophthalmus</i>
California towhee ^{2*}	<i>Pipilo fuscus</i>
Pacific golden plover	<i>Pluvialis fulva</i>
black-bellied plover ²	<i>Pluvialis squatarola</i>
horned grebe ²	<i>Podiceps auritus</i>
eared grebe	<i>Podiceps nigricollis</i>
pied-billed grebe ²	<i>Podilymbus podiceps</i>
blue-gray gnatcatcher	<i>Poliioptila caerulea</i>
Sora	<i>Porzana carolina</i>
purple martin	<i>Progne subis</i>
bushtit (common) *	<i>Psaltiriparus minimus</i>
Virginia rail	<i>Rallus limicola</i>
American avocet	<i>Recurvirostra americana</i>
ruby-crowned kinglet ²	<i>Regulus calendula</i>
golden-crowned kinglet	<i>Regulus satrapa</i>
rock wren	<i>Salpinctes obsoletus</i>
black phoebe ²	<i>Sayornis nigricans</i>
Say's phoebe ²	<i>Sayornis saya</i>
Allen's hummingbird	<i>Selasphorus sasin</i>
western bluebird	<i>Sialia mexicana</i>
red-breasted nuthatch	<i>Sitta canadensis</i>
white-breasted nuthatch	<i>Sitta carolinensis</i>

TABLE B-37: AVIAN SPECIES(Continued)

COMMON NAME	SCIENTIFIC NAME
red-breasted sapsucker	<i>Sphyrapicus varius daggetti</i>
pine siskin	<i>Spinus pinus</i>
lesser goldfinch	<i>Spinus psaltria</i>
American goldfinch	<i>Spinus tristis</i>
chipping sparrow	<i>Spizella passerina</i>
northern rough-winged swallow	<i>Stelgidopteryx serripennis</i>
least tern	<i>Sterna</i>
Caspian tern	<i>Sterna caspia</i>
Forster's tern ¹	<i>Sterna forsteri</i>
western meadowlark ^{1,2,*}	<i>Sturnella neglecta</i>
European starling ^{1,2,*}	<i>Sturnus vulgaris</i>
violet-green swallow	<i>Tachycineta thalassina</i>
Bewick's wren	<i>Thryomanes bewickii</i>
greater yellowlegs	<i>Totanus melanoleucus</i>
California thrasher	<i>Toxostoma redivivum</i>
house wren	<i>Troglodytes aedon</i>
winter wren	<i>Troglodytes troglodytes</i>
American robin ^{1,2,*}	<i>Turdus migratorius</i>
barn owl ^{2*}	<i>Tyto alba</i>
orange-crowned warbler	<i>Vermivora celata</i>
Hutton's vireo	<i>Vireo huttoni</i>
Wilson's warbler	<i>Wilsonia pusilla</i>
yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
mourning dove ^{1,2,*}	<i>Zenaidura macroura</i>
golden-crowned sparrow ²	<i>Zonotrichia atricapilla</i>
white-crowned sparrow ^{2*}	<i>Zonotrichia leucophrys</i>

Source: U.S. Navy, 1986, 1994e, 1995c, 1996c; City and County of San Francisco, Planning Department, 1994a.

* = Species observed and recorded by local residents.

1 = Species detected during 1995 survey (U.S. Navy, 1995c).

2 = Species detected during previous surveys.

TABLE B-38: ANIMAL SPECIES

Amphibians, reptiles, and mammals that potentially inhabit HPS and the ROI are listed below. Species recorded from field surveys at HPS are noted.

COMMON NAME	SCIENTIFIC NAME
Amphibians and Reptiles	
rough-skinned newt	<i>Taricha granulosa</i>
California newt	<i>Taricha torosa</i>
ensatina ²	<i>Ensatina escholtzi</i>
arboreal salamander	<i>Aneides lububris</i>
California slender salamander ²	<i>Batrachoseps attenuatus</i>
western toad	<i>Bufo boreas</i>
Pacific chorus frog	<i>Hyla regallia</i>
western skink	<i>Eumeces skiltonianus</i>
northern alligator lizard	<i>Gerrhonotus coerleus</i>
southern alligator lizard	<i>Gerrhonotus multicarinatus</i>
coast horned lizard	<i>Phrynosoma coronatum</i>
western fence lizard ^{1,2}	<i>Sceloporus occidentalis</i>
racer	<i>Coluber constrictor</i>
western rattlesnake	<i>Crotalus viridis</i>
ringneck snake	<i>Diadophis punctatus</i>
common kingsnake	<i>Lampropeltis getulus</i>
striped racer	<i>Masticophis lateralis</i>
Pacific gopher snake ²	<i>Pituophis melanoleucus</i>
western aquatic garter snake ²	<i>Thamnophis couchi atratus</i>
western terrestrial garter snake	<i>Thamnophis elegans</i>
common garter snake	<i>Thamnophis sirtalis</i>
Mammals	
pallid bat	<i>Antrozous pallidus</i>
coyote	<i>Canis latrans</i>
opossum	<i>Didelphis marsupialis</i>
big brown bat	<i>Eptesicus fuscus</i>
feral domestic cat ²	<i>Felis domesticus</i>
red bat	<i>Lasiurus borealis</i>
hoary bat	<i>Lasiurus cinereus</i>
black-tailed hare ^{1,2}	<i>Lepus californicus</i>
bobcat	<i>Lynx rufus</i>
striped skunk ²	<i>Mephitis mephitis</i>
California vole	<i>Microtus californicus</i>
house mouse ²	<i>Mus musculus</i>
long-tailed weasel	<i>Mustela frenata</i>
California myotis	<i>Myotis californicus</i>
Yuma myotis	<i>Myotis yumehensis</i>
dusky-footed woodrat	<i>Neotoma fuscipes</i>
shrew mole	<i>Neurotrichus gibbsii</i>
California mouse	<i>Peromyscus californicus</i>
deer mouse	<i>Peromyscus maniculatus</i>
pinyon mouse	<i>Peromyscus truei</i>
harbor seal ²	<i>Phoca vitulina</i>
western pipistrelle	<i>Pipistellus hesperus</i>
Townsend's big-eared bat	<i>Plecotus townsendii</i>
raccoon ²	<i>Procyon lotor</i>
Norway rat ²	<i>Rattus norvegicus</i>
black rat	<i>Rattus rattus</i>
western harvest mouse	<i>Reithrodontomys megalotis</i>
broad-footed mole	<i>Scapanus latamanus</i>

TABLE B-38: ANIMAL SPECIES (*Continued*)

COMMON NAME	SCIENTIFIC NAME
Mammals (<i>continued</i>)	
eastern gray squirrel	<i>Sciurus carolinensis</i>
western gray squirrel	<i>Sciurus griseus</i>
ornate shrew	<i>Sorex ornatus</i>
Trobridges's shrew	<i>Sorex trobridgii</i>
vagrant shrew	<i>Sorex vagrans</i>
California ground squirrel ¹	<i>Spermophilus beecheyi</i>
spotted skunk	<i>Spilogale gracilis</i>
Audubon's cottontail	<i>Sylvilagus audubonii</i>
brush rabbit	<i>Sylvilagus bachmani</i>
Brazilian free-tailed bat	<i>Tadarida brasiliensis</i>
badger	<i>Taxidea taxus</i>
Botta's pocket gopher ²	<i>Thomomys bottae</i>
gray fox	<i>Urocyon cinereoargenteus</i>
red fox ²	<i>Vulpes vulpes</i>

Source: U.S. Navy, 1995c; City and County of San Francisco, Planning Department, 1994a.

1 = Species detected during 1995 survey (U.S. Navy, 1995c).

2 = Species detected during previous surveys (City and County of San Francisco, Planning Department, 1994a).

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MEMORANDUM

To: Byron Rhett and Alan Loving, San Francisco Office of Military Base Conversion
CC: Karen Alschuler, SMWM
From: Naomi Porat, Sedway & Associates
Date: May 24, 1995
Subject: **Technical Summary of Hunters Point Shipyard Real Estate Market Projections**

Sedway & Associates ("S&A") is pleased to submit this technical memorandum summarizing our findings of the market support for land uses represented in the *Hunters Point Shipyard Land Use Alternatives and Proposed Draft Plan* ("Draft Plan").¹ The purpose of the market research is threefold: (1) to test the market support and reasonableness of the Hunters Point Shipyard Land Use Plan and recommend land use adjustments to reflect market demand; (2) to provide input for designing the development phasing program at the Hunters Point Shipyard ("Shipyard"); and (3) to commence initial long-term marketing efforts with major users as a vehicle to further test the validity of the Plan's key special uses (i.e., education and training, arts facilities).

S&A's market analysis involved review of relevant documents and plans produced to date on the Hunters Point Shipyard reuse and planning effort. In addition, S&A evaluated the research methodology and findings of the Hunters Point Shipyard market analysis produced by Williams-Kuebelbeck & Associates ("WK&A"). This task involved extensive market research utilizing reports and data prepared by local real estate brokers, the Association of Bay Area Governments, Urban Land Institute, U.S. Census, San Francisco Redevelopment Agency, San Francisco Planning Department, U.S. Department of Commerce, San Mateo County Economic Development Association, and Arthouse. In addition to utilizing secondary data sources for conventional real estate development, S&A also conducted primary research to identify support for niche markets such as arts, cultural and educational training facilities.

¹Office of Military Base Conversion, The San Francisco Redevelopment Agency and The Planning Department, City and County of San Francisco; *Hunters Point Shipyard Land Use Plan: Land Use Alternatives and Proposed Draft Plan*. March 1995.

SUMMARY OF FINDINGS

This memorandum presents S&A's conclusions of absorption potential and build-out of the following uses at the Shipyard from 1996 to 2025:

- Light Industrial
- Research and Development
- Residential
- Arts and Cultural Facilities
- Educational and Training
- Retail

A summary of S&A's build-out and land utilization forecasts, in comparison to the WK&A and Draft Plan projections, is provided in Table 1. The corresponding employment projections by land use are provided in Table 2.

As indicated in Table 1, S&A projects that the 500-acre Shipyard could potentially capture approximately 4.1 million square feet of real estate development (including rehabilitation of existing buildings) and generate 6,647 permanent jobs during the next 30 years. In contrast, the Draft Plan is based on a range of 4.0 to 6.2 million square feet of development during the next 30 years. The major variances, which accounts for 2.1 million square feet between the Draft Plan (maximum projections) and S&A's projections, are in research and development build-out and live/work unit development potential. S&A's projections are slightly greater than WK&A forecasts (which differ from the Draft Plan and are based on projections to the year 2015) due to S&A's projections of an additional 200 housing units and WK&A's omission of significant arts-, cultural- and educational/training-related development opportunities.

The focus of this memorandum is a brief explanation of S&A's forecast methodology. In general, S&A based the forecasts on an analysis of current market conditions, historical development trends, industry growth rates, employment forecasts, and relevant real estate product performance indicators to project market support for major real estate development at the Shipyard through the year 2025. Although defensible methodologies were employed to determine these long-term forecasts, it is important to recognize the magnitude of uncertainty that is inherently involved in projections beyond a ten-year time frame. External unanticipated factors such as future economic recessions, international trade and currency policies, or natural disasters could significantly impact development potential. However, for the purpose of regulatory and planning requirements to complete the reuse plan, these projections represent the maximum development envelope and hence can be reasonably utilized for transportation, infrastructure and environmental costing and impact purposes.

Although S&A was not specifically requested to conduct an industry sectoral analysis to determine the specific types of industries and firms that would locate at the Shipyard, we reviewed the industries projected in the Draft Plan and WK&A study for reasonableness. In sum, S&A concurs with the conclusions that the following industries will most likely be the primary business prospects for the Shipyard based on regional and national trends: printing and publishing, medicinals and botanicals, trucking and courier services, wholesale sales, food products, motion picture production, electromedical equipment, etc.

The following provides a concise summary of S&A's real estate market analysis conclusions and methodology, with the data tables appended to the memo.

LIGHT INDUSTRIAL MARKET

Overview of the Market

S&A researched the light industrial markets within San Francisco and northern San Mateo County to determine the potential for capturing new light industrial demand generated in these markets. Light industrial uses include light assembly, warehouses, printing operations, and other industrial uses that result in modest impacts on surrounding properties.

The primary market area is defined as a seven-mile radius from the Shipyard, including the City of San Francisco and northern San Mateo County. The market area is defined as the general location in which firms would be indifferent in site selection assuming that site-specific locational advantages are adjusted in price and amenities. Although the type of industrial space in San Francisco and northern San Mateo County varies significantly, proximity to the Bay Area's central employment hub, proximity to the San Francisco International Airport, and price comprise the driving forces for site selection in this market area.

The San Francisco light industrial market is characterized as mature and stable with small- to medium-sized buildings ranging from 5,000 to 150,000 square feet. The total light industrial inventory in San Francisco was approximately 30.6 million square feet in 1994, located predominantly in the South of Market (12.6 million square feet), Third Street Corridor (12.7 million square feet), Bayview (4.4 million square feet), and Mission District (900,000 square feet) areas. Although new construction and absorption have been negligible in the past ten years, rehabilitation and retrofitting activities have been active to accommodate the burgeoning multimedia industry, particularly in the South of Market area. San Francisco's older industrial stock is burdened by toxic contamination and unreinforced buildings. Many prime industrial buildings along San Francisco's Waterfront and South of Market area continue to be subject to conversion for higher value uses such as live/work units, office space, and restaurants.

The existing inventory of industrial buildings at the Shipyard is approximately 2.3 million square feet, of which approximately 740,000 square feet are currently leased to small businesses. The tenants include a mix of approximately 542,000 square feet of light industrial businesses (e.g., roller skate manufacturer, warehouse storage, sheet metal manufacturer), 38,000 square feet of research and development (e.g., metal testing lab, quality assurance testing, sound and recording studio), and 120,500 square feet of artists studios. It appears that a significant portion of the non-leased buildings and a portion of the leased buildings suffer serious deterioration and will require demolition. S&A will determine the feasibility of rehabilitating existing leased buildings for short- or long-term occupancy, based on the building evaluation in process by Manna Construction.

Although northern San Mateo County's industrial stock of 21.5 million square feet is approximately 9 million feet smaller than San Francisco's inventory, the area has been achieving more net absorption and construction activity during the past ten years than San Francisco's market. For example, northern San Mateo County captured approximately one-half million square feet of new development in the past decade compared to no new net industrial growth in San Francisco. Another indicator of northern San Mateo County industrial market's strength relative to San Francisco's market is evidenced by its

approximate 6.5 percent vacancy rate in 1994, compared to 8.5 percent in the San Francisco industrial market. The industrial stock in northern San Mateo County is characterized by newer, single-story, concrete tilt-up type buildings.

The mix of small start-up technology industries and mature industries that are located in the older industrial space in San Francisco, in addition to the more recent development of technology headquarters (and back-office space) captured by northern San Mateo County, is representative of the type of firms that will be attracted to the Shipyard over the 30-year build-out. S&A anticipates that the small start-up firms will be the pioneering users in the Shipyard development's early years; and, hence, the "mixed use" area along the Shipyard's northern waterfront is targeted as the first phase for development. Established companies seeking large development sites will most likely not be attracted to the Shipyard until later phases (2011 and beyond) when major transportation improvements are complete, physical amenities are installed, and San Mateo County has absorbed many of its development sites. The Shipyard will most likely not compete with developable land in southern San Mateo or Santa Clara counties, which have attracted the nation's leading technology firms due to the synergistic operation of the industry, which requires proximity and concentration.

Absorption Forecast Methodology

S&A's light industrial market projections are based on historical and current industrial building inventory, annual construction, occupied and vacant space, annual net absorption, industrial employment projections, industrial build-out for major industry sectors, industrial land and lease comparables, and other industrial performance indicators for the primary market area. The following section describes S&A's industrial projections methodology as summarized in Table 3, with the back-up support data provided in Tables 4 through 8 appended to this memo.

Potential absorption of industrial development at the Shipyard is based on projected employment-driven growth in demand for industrial space in the market area and S&A's determination of a reasonable capture within the Hunters Point Shipyard. The demand for industrial space, referred to as "industrial growth rate" in Table 3, is a function of employment growth projections produced by the Association of Bay Area Governments (ABAG) and industrial space utilization rates for each major employment sector as compiled by the Urban Land Institute (ULI). The market area employment projections calculations are presented in Table 4. For example, whereas 100 percent of manufacturing employees are located in industrial space, ULI studies indicate that approximately 40 percent of wholesale employees utilize industrial space. Applying these industrial space utilization rates by employment sector and ABAG employment projections compiled for the market area during the study period, S&A calculated the number of employees requiring industrial space during the next 30 years.

The projected "industrial inventory" and "occupied space" in Table 3 are based on the market area's current inventory and forecasted growth rates. S&A compiled data on the current and historical market conditions from the San Mateo County Economic Development Association, Grubb & Ellis, CB Commercial, and the California Development Department (see Table 5). The "total potential new development" projection in Table 3 is based on the projection of "net new demand" (i.e., the change in occupied space) less a portion of the existing vacant industrial stock in the market area.

The "total potential absorption" of industrial space at the Shipyard (Table 3) represents the total potential for new development in the market area multiplied by an estimated capture rate for the Shipyard. S&A's estimated Shipyard capture rates are based on the Bayview/Hunters Point historical

and current share of the industrial building and vacant industrial zoned land inventory in the market area (see Table 6), adjusted for the Shipyard's access, infrastructure (and assumed improvements over time), environment, and critical mass of development.

In addition, given the significant inverse relationship between absorption and pricing (i.e., as pricing decreases absorption increases), there is a pricing assumption embedded in the projected capture rates. Specifically, S&A assumes that the Shipyard industrial lease and land sale prices will be initially slightly lower than the Mission Bay/South Bayshore market rates and in the long term relatively comparable to northern San Mateo County rates. For example, in the near-term, the "market" rate for industrial leases at the Shipyard is slightly higher than the current leases, but lower than lease rates in comparable space in the Mission Bay/South Bayshore industrial market as outlined in Table 7. Back-up lease comparable data are provided in Table 8.

The capture rate is assumed to be relatively low during the first five years of the Plan, which precedes major infrastructure, access and environmental improvements. It is assumed that by Phase II (commencing in year 2001), the Shipyard's capture rate will increase to 8 percent, which is comparable to the Hunters Point/Bayview current share of the market area's industrial build-out, vacant inventory and occupied industrial inventory. By Phase III (commencing in year 2006), it is assumed that the Shipyard's capture rate is 10 percent, which surpasses the existing Hunters Point/Bayview capture of industrial space in the market area due to the Shipyard's availability of large development sites, implementation of significant infrastructure and access improvements, and almost full implementation of the environmental remediation program. S&A projects that the capture rate at the Shipyard will not exceed 15 percent, primarily due to market competition as well as unmitigatable access constraints.

Conclusions

In sum, S&A projects that the Shipyard could potentially capture a total of 1.2 million square feet of industrial development over the 30-year buildout assuming that significant investments are made in infrastructure, access, marketing, and environmental improvements. In Phase I, approximately 95,200 square feet of new and rehabilitated industrial development is estimated to be captured at the Shipyard. In addition, based on conversations with San Francisco Municipal Railway (SFMuni), S&A included an additional 291,500 square feet of space for its railyard, resulting in a total of 386,700 square feet of industrial space absorbed in Phase I. S&A projects that the Shipyard could absorb approximately 127,200 square feet of industrial development in Phase II (2001 - 2005); 50,500 square feet in Phase III (2006 - 2010); 164,200 square feet in Phase IV (2011 - 2015); 240,600 in Phase V (2016 - 2025); and 279,500 in Phase VI (2021 - 2025). The decrease in industrial demand in Phase III accounts for the natural cyclical business trends as reflected in ABAG's forecasting model.

As a final check on the reasonableness of these industrial projections, S&A compared the market area's historical annual average industrial construction rates with the projections for the Shipyard. The annual average industrial construction in northern San Mateo County during the past 15 years was approximately 126,000 square feet.² S&A's annual average industrial development projection over the

²The total square feet of industrial construction during the past 15 years is not available. However, according to brokers there has been insignificant new industrial development in San Francisco during this period.

Shipyard's 30-year build-out is approximately one-third of northern San Mateo County's historical performance, or 42,000 square feet per year. Hence, these forecasts are reasonable and conservative.

RESEARCH AND DEVELOPMENT MARKET

Overview of the Market

S&A researched the San Francisco and northern San Mateo County research and development (R&D) markets to forecast potential absorption at the Shipyard. In general, R&D space is a subset of light industrial real estate, differentiated by the amount of office space (i.e., typically 15 percent), significant site and building amenities (e.g., parking ratios of at least 3 per 1000 square feet, building clear heights less than 18 feet, and ample glass and light), in addition to the users' stage in the business life cycle (i.e., early production phase). Users in the Bay Area primarily consist of electronics, software, biotechnology, multimedia, and environmental industries. Although the R&D inventory is very small and in its nascent stage in the market area, S&A projects significant opportunities for growth. The market area's central location, proximity to major universities and highly educated workforce provide strong advantages for capturing these industries.

San Francisco's R&D development is occupied by either small start-up businesses or larger institutional users. As discussed previously, the small start-up businesses are generally located in retrofitted older industrial stock in San Francisco's South of Market area. The larger institutional users generally own their buildings, such as UCSF and Gladstone Institute.

In contrast, northern San Mateo County's R&D market has grown rapidly in the past decade due to its central location and lower prices, but this growth has been from a low base. Between 1986 and 1994, the R&D inventory in northern San Mateo County grew from 112,800 square feet to 930,000 square feet (see Table 10). Furthermore, the 7.3 percent vacancy rate in the northern San Mateo County R&D inventory was significantly lower than southern San Mateo County's overall 10.2 percent R&D vacancy rate in 1994. Northern San Mateo County's R&D monthly lease rates range from \$0.80 to \$1.10 per square foot, compared to up to \$1.50 in the County as a whole.

S&A believes that the Shipyard could benefit in the future from the northern movement of Peninsula R&D firms into northern San Mateo County if aggressive marketing is undertaken. The Shipyard offers many attractive features for R&D firms such as large development sites, proximity to major research universities (UCSF, Stanford, UC Berkeley), and potentially competitive prices.

Absorption Forecast Methodology

S&A's methodology for forecasting the Shipyard's potential absorption of R&D space during the next 30 years is similar to the light industrial forecast methodology outlined earlier in this report. Table 9 presents S&A's methodology and conclusions.

According to ABAG, the northern San Mateo County market area is anticipated to capture approximately 800 to 1,000 new R&D jobs each five-year increment, or a total of 5,900 R&D jobs during the next 30 years. Based on ABAG's R&D employment density of 350 square feet per employee, S&A estimates that the gross demand for R&D space in the market area could be approximately 2.1 million square feet during the period 1996 - 2025.

Conclusion

In total, S&A projects that the Shipyard could absorb approximately 390,500 square feet of R&D space during the project's 30-year build-out, based on an overall capture rate of approximately 19 percent. S&A's projections are slightly less than WK&A's projection and significantly less than R&D build-out projections represented in the Shipyard's Draft Plan (770,000 to 1,150,000 square feet).

S&A anticipates that the Shipyard could capture only a small proportion of the market area's R&D space demand in the project's first ten years. The initial pioneering users related to the arts, such as video or music production, could be attracted to the Shipyard to obtain low rents in a nontraditional and isolated setting. Assuming a 5 percent capture rate in the first five years, the maximum R&D development potential in Phase I (1996 - 2000) is estimated to be 13,700 square feet, indicating the initial users will occupy renovated existing space at the Shipyard. As indicated in the summary table (see Table 1), approximately 60,000 square feet of R&D build-out in the first two phases is assumed to be located in the "mixed-use" area programmed for the Shipyard's northern waterfront.

Assuming that by Phase II (2001 - 2005) the Shipyard's northern waterfront properties will be cleared of debris and landscaped, offering spectacular open views of the City and Bay in addition to an important waterfront open space amenity, the capture rate is projected to increase to 15 percent of the market area's total R&D development.

S&A assumes that the capture rate increases to 20 percent By Phase III (2006 - 2010), resulting in the absorption of an additional 65,200 square feet of new R&D development. For the remaining three phases (2011 to 2025), S&A assumes a stabilized capture rate of 25 percent of the market area's development, indicating a potential absorption of 84,100 square feet of new R&D space during the period 2011 - 2015, 88,300 square feet during the period 2016 - 2020, and 92,500 square feet during the period 2021 - 2025.

Similar to the industrial forecasts, the capture rates and associated absorption schedules projected for the Shipyard are based on pricing (lease rates and land prices). A discount from average lease rates in San Francisco and northern San Mateo County is essential to account for the Shipyard's access constraints. For example, whereas the average R&D monthly lease rates in the market area are in the range of \$0.80 to \$1.10, the Shipyard most likely could not expect to obtain lease rates greater than \$0.80 per month for R&D space. This pricing projection is assumed to be in the lower end of the current market rate ranges. This discounting is necessary to achieve a level of indifference between locating at the Shipyard or at nearby locations that do not have the same access constraints as the Shipyard. This relationship would be particularly strong in the Phase I when major infrastructure access and environmental improvements are incomplete.

RESIDENTIAL MARKET

Market Overview

S&A conducted targeted research on the residential market in San Francisco, specifically focusing on development trends, household growth, and potential capture rates. The primary market area in which new housing at the Shipyard would likely compete is San Francisco and the southeast quadrant of the City.

Townhome and Condominium Market. S&A focused on San Francisco's townhome and condominium market as the primary type of residential development that would most likely be built by developers due to both financial feasibility considerations and market demand. An analysis conducted by S&A indicates that sales and construction activity in San Francisco has been strong, averaging approximately 440 units annually during the 1990 through 1994 period. Most of the new developments in the past five years have been located in highly desirable locations, such as Baycrest, located near the southern waterfront; the Sutterfield on Cathedral Hill; Portside, located under the Bay Bridge on the southern waterfront; and Parc Telegraph on the northern waterfront. With the exception of Stoneridge, an economical project in the southeast quadrant of the City, there has been a dearth of new large-scale non-subsidized townhome or condominium developments that are priced less than \$250,000 per unit, or \$200 to \$340 per square foot. High land prices for San Francisco's remaining residentially zoned land can be attributed to this trend. Hence, significant pent-up demand exists for new for-sale attached residential units in this price range.

The only active single-family residential market in San Francisco is in the Bayview/Hunters Point area due to significant assistance and promotion by the San Francisco Redevelopment Agency. Sales prices for the new market rate single-family and townhome units in the southeast area of San Francisco are in the range of \$140,000 to \$200,000, or \$120 to \$165 per square foot as indicated in Table 11. This price range includes the nonsubsidized Stoneridge project of 94 townhomes on Geneva Avenue.

Live/Work Units. The "live/work" market in San Francisco has experienced a large increase in the level of activity as evidenced by new construction and rehabilitation of existing industrial buildings to live/work space. The primary factors contributing to this development activity have been changing work practices, which have been aided by technological innovations, the desirability of this type of space by young urban dwellers, and pent-up demand by first-time homebuyers seeking central city housing. Furthermore, 1988 changes to the San Francisco Planning Code significantly improved the viability and increased the available sites for development of live/work units. For example, the recent changes permit live/work units and arts activities as a principal use in manufacturing and commercial districts and allow for the conversion of buildings to joint living and work quarters for artists.

Most of the recent "live/work" developments, relatively unaffordable to San Francisco's artists community, have attracted young professionals seeking unconventional dwelling spaces that offer flexible working options. As indicated in Table 12, the sales price range for recent live/work condominium developments in San Francisco is \$100,000 to \$495,000 or \$170 to \$225 per square foot, significantly higher than the new single-family and attached housing developments in the City's southeast area.

In contrast, the more affordable live/work units targeted to artisans and self-employed non-artists are generally rental projects developed in rehabilitated older industrial buildings. Table 13 highlights rental live/work projects in San Francisco and Oakland. As indicated, the average rent and size for rental live/work loft projects in San Francisco is \$0.88 per square foot per month for 950-square-foot spaces. These projects are achieving exceptionally high occupancy rates relative to the overall San Francisco rental market. Oakland live/work rentals are relatively larger, averaging 1,286 square feet per unit, and less expensive, averaging \$0.61 per square foot compared to the San Francisco market. Initially, the Oakland market will set the standards for the Shipyard's new live/work units in order to capture the increasing migration of artists and self-employed entrepreneurs who are leaving San Francisco to obtain affordable live/work space in Oakland.

Absorption Forecast Methodology

For Sale Attached Units. S&A prepared an estimate of potential demand for new for-sale attached housing in San Francisco during the period 1996 to 2025 in the price range of \$100,000 to \$250,000, as presented in Table 14. This price range represents the current low to upper limit sales prices available at developments in the southeast quadrant of the City. As indicated in Table 14, the Shipyard potential absorption projections are a function of demand generated by new household growth as well as turnover among existing San Francisco households. S&A relied upon ABAG's household growth projections that are derived from employment growth, household formation rates, income, age distribution, stages in households' life cycle, land availability, cost of housing, and other economic factors (see Table 15).

S&A's housing demand projections also utilize numerous other housing figures, such as the differential propensity of new versus existing households to purchase rather than rent, the propensity to purchase an attached versus detached home as indicated by historic sales data, and the propensity to purchase a new versus existing attached home. Moreover, housing demand in San Francisco tends to be supply-driven. Hence, appropriately priced, good quality product almost always has the potential to capture new household growth.

S&A projects that the annual demand for new attached housing units in the \$100,000 to \$200,000 price range in San Francisco may be between 770 to 880 annually in both the short- and long-term. This projection appears realistic given historical building permit data. Although the average annual number of multifamily residential building permits issued in San Francisco during the past five years was 800 units, the annual average permits issued during the past 25 years was 1,515 (see Table 16). In recent years, San Francisco's new supply of for-sale attached units has been predominantly priced above \$300,000. Hence, San Francisco's housing market has significant pent-up demand for owner-occupied housing affordable to the professional workforce with household incomes in the range of \$25,000 to \$63,000.

The Shipyard capture rates indicated in Table 14 are based on San Francisco development trends, available land and S&A's professional judgment. Based on the projected demand and capture rates (see Table 14), S&A estimates that approximately 980 attached for-sale residential units could be absorbed at the Shipyard in the first ten years of redevelopment, a figure higher than the maximum 800 housing units set forth in the Shipyard's Draft Plan. Hence, the total residential development potential of 800 units presented in the Summary Table 1 is based on policy priorities rather than development constraints.

Live/Work Residential Units. S&A's preliminary analysis of the live/work market and discussions with local developers indicate significant demand for affordable live/work rentals and condominiums. However, market acceptance of live/work units at the Shipyard's designated mixed-use area will require significant physical improvements at the site (e.g., clearance of vacant buildings, green area along the waterfront), a critical mass of commercial development (i.e., services, retail and artisan activities), and permanent security. Based on absorption projections for other uses, S&A has assumed that live/work developments will most likely not occur for at least ten years, or not until Phase III of the Shipyard's development when the mixed-use area has been significantly built-out.

Commencing in Phase III (2006), S&A estimates that approximately 20 rental and condominium live/work units per year could be absorbed at the Shipyard if appropriately priced. As a frame of reference, the 18th and Arkansas live/work condominium development has achieved monthly absorption of

approximately 1.6 units, or almost 20 units per year for the market rate units in the price range of \$140,000 to \$305,000. According to the realtor of the subsidized artists' live/work condominium units priced in the range of \$70,000 to \$125,000, there is currently an application list of 350 people for the 18 units.

Conclusion

In sum, S&A has included 1,300 residential units in the Shipyard's 30-year development projections, including 800 for-sale townhome units and 500 rental and condominium live/work units. The 800 for-sale townhome units in the Draft Plan represent approximately 20 percent of the total housing inventory projected for the South Bayshore area during the 30-year period (1996 - 2025), based on ABAG data (see Table 15).

CULTURAL AND EDUCATIONAL FACILITIES

Market Overview

S&A analyzed secondary source data and conducted primary research to identify development opportunities for cultural and educational facilities at the Shipyard. Cultural and educational facilities include entertainment activities, museum and other cultural uses, arts-related businesses, artistic enterprises and activities, vocational training, public educational services, and private training institutions.

According to the San Francisco *Commerce and Industry Inventory*, produced by the San Francisco Department of City Planning, the cultural/institutional sector in San Francisco has been the fastest growing economic sector in San Francisco. For example, between 1976 and 1990, the percentage change in cultural/institutional employment was 93 percent, compared to a 45 percent overall employment change in San Francisco. Furthermore, the cultural/institutional industry represents one of the top three sectors that generated most of San Francisco's employment growth during the period between 1976-1990.³ During this 14-year period, the cultural/institutional sector added 50,000 jobs to the San Francisco employment base.

Despite the proliferation of cultural/institutional uses citywide, the Bayview area had the least number of cultural/institutional establishments in San Francisco, according to the 1987 County Business Patterns. For example, Bayview was home to only 50 cultural/institutional facilities, or less than one percent of the City's total inventory. Of the 50 establishments in the Bayview area, the majority (80 percent) were social and health services and membership organizations. Eliminating these categories, there were only 12 cultural facilities in the Bayview in 1987, compared to 50 in the Mission District.

These overall cultural/institutional economic indicators, coupled with surveys conducted by S&A, indicate relatively strong demand for facilities at the Shipyard. However, the supply and development of cultural and educational facilities are generally driven to a greater extent by available funding sources and policy priorities than demand. Most of the cultural institutions in San Francisco and a large proportion of the educational facilities are owned and operated by nonprofit or public institutions.

³San Francisco Department of City Planning, *Commerce and Industry Inventory*, June 1992, p.26.

According to a study conducted by the San Francisco Arts Commission, 52 percent or \$48 million of the 1985 annual income of San Francisco's nonprofit arts organizations was contributed by government, foundations and corporate grants. Due to major cutbacks in government funding for the arts and associated increased demand on the private sources, the major constraint to cultural/educational facilities at the Shipyard is financial resources.

Absorption Forecast Methodology

Given that cultural and educational development is primarily driven by funding availability and policy priorities, S&A utilized the build-out figures published in the Shipyard's Draft Plan as the "policy directive." Our methodology for verifying the reasonableness of the Draft Plan's land dedication to these uses involved test marketing to targeted cultural and educational facilities in the Bay Area. The test marketing approach enabled S&A to screen a sample of local cultural and educational organizations regarding their potential expansion or relocation plans, interest in the Shipyard as a new or satellite location, and key factors for relocation. The survey results provide the basis for identifying a sample prototype distribution of cultural and educational facilities that could be developed at the Shipyard.

Prototype of Cultural Facilities Projected for the Shipyard

Cultural uses covers a broad spectrum of activities in the San Francisco Zoning Code (Section 102.2) including performance, exhibition, rehearsal, production, schools, arts spaces for galleries and studios, commercial arts and art-related business services, etc. S&A assumes that the type of cultural uses that will be attracted to the Shipyard will comprise a mixture of nonprofit arts uses and arts-related private enterprises. These uses are designated for the Shipyard's "cultural" and "mixed-use" districts as programmed in the Draft Plan.

The following tenant types were identified through survey work and targeted test marketing conducted by S&A: museum, performance theater, production and recording, dance studios, publishing and printing, artist studios, and galleries. Table 17 provides a summary of the type of cultural and educational facilities that may be attracted to the Shipyard and associated annual participation rates for the purposes of determining traffic generation. The uses listed in Table 17 are prototypes for the "cultural" complex area of the Draft Plan. The artist studios and galleries are included in the "mixed-use" build-out projections.

Museum. Sufficient interest has been demonstrated for a museum at the Shipyard to showcase the Shipyard's history and industry, and the history of African-Americans, Native-Americans, as well as other local communities that have a historical link to the Shipyard. Based on input from the planning team, approximately 45,000 square feet of space for the museum has been included in S&A's projections. A large proportion of this space could be utilized for the Shipyard's history and industry museum, including unique industrial relics dismantled during redevelopment and demolition.

Although the local neighborhood, city residents and tourists would provide the patronage support, private and public assistance would be required to provide the financial support for a museum.

Performance Theater. Similar to the museum's source of support, a theater at the Shipyard could potentially attract sufficient patronage yet still require significant public and private subsidies for operations. Based on a survey of three local performance theaters, patrons generally provide less than one-quarter of theaters' operating budgets. A theater group could potentially utilize an existing building

of approximately 5,000 square feet for theater performances and other productions. Table 18 provides a summary of S&A's local theater research.

Production and Recording. S&A interviewed key representatives from Bayview Opera House, Eco-Rap, and Life on the Water to determine potential for a production and recording studio at the Shipyard. Based on existing recording programs offered at Bayview Opera House in addition to the interest and need to expand the programs, an opportunity exists to create a for-profit/nonprofit production and recording studio at the Shipyard focusing on meeting the needs of musicians, recording artists, singers, producers, and related music and multimedia professionals. In addition, a Shipyard production and recording studio may benefit from a partnership with San Francisco State's recording arts curriculum.

Dance Studios. S&A interviewed a key representative from a dance troupe currently based in the Bayview community. Although the dance troupe is not prepared to occupy space at the Shipyard in the near term, long-term opportunities may be developed as the cultural facilities component of the reuse plan begins implementation. Specifically, as related arts and education organizations occupy space at the Shipyard, the representative mentioned an interest in becoming part of the Shipyard's artist community.

Publishing and Printing. Publishing and printing represents one of many arts-related industries that could be attracted to the Shipyard by promoting the art-related development theme. Many of these industries require large floor plates and could benefit from locating proximate to their consumer base. S&A included a total of 25,000 square feet for these uses.

The potential growth markets for publishing and printing are well-documented by the U.S. Commerce Department. As an example, publishing and printing is a robust \$177 billion industry in the U.S. with approximately 60,000 firms and between 1 million and 2 million employees.⁴ The U.S. Commerce Department anticipates the industry will grow at a steady annual average rate of 3 percent in constant dollars. Most of the growth in demand for this industry's products will be driven by household growth, creating new markets for print advertising materials, including magazines, catalogs, and direct mail; in addition, business growth will contribute to expanding demand for industry products.

Artist Studios. S&A analyzed the artist studio market in San Francisco and the East Bay to determine potential demand and support for expanding upon the existing artist community at the Shipyard. Surveys of comparable studio developments, artists, and studio developers confirmed that there is significant pent-up demand for studio space with appropriate amenities in the rental range of \$0.50 to \$0.75 per square foot per month.

S&A estimates that there are currently approximately 600 artist studios in San Francisco's South of Market, Mission, Potrero and Bayshore neighborhoods, including the Shipyard studios. The average studio size in these neighborhoods is approximately 900 square feet renting within the range of \$0.50 per square foot (Bayview) to \$1.00 per square foot (South of Market), depending upon location and amenities. Table 19 provides a distribution of studio space by size for these neighborhoods, excluding the Shipyard. Most of these studios are located in converted industrial buildings that offer minimal amenities or appropriate lighting and often lack basic utilities. It is likely that the majority of these

⁴U.S. Department of Commerce, *U.S. Industrial Outlook 1994*.

studios were developed (or rehabilitated) during the past 30 years as San Francisco's waning industrial sector resulted in creative adaptive reuses for the vacated industrial buildings.

S&A surveyed larger studio complexes, built or renovated specifically for artist use, as the appropriate comparables for development or reuse of existing buildings at the Shipyard. As noted in Table 20, most of the larger studio centers have been organized by cooperative artist ventures. The more successful studio complexes offer a range of studio sizes, gallery space and workshops for the general public.

Galleries. S&A conducted an assessment of San Francisco's gallery market to determine the potential for gallery space at the Shipyard. The San Francisco market includes more than 500 galleries throughout the City. The greatest concentration of galleries in San Francisco is located in the downtown/Sutter Street, South of Market/Mission District, and North Beach/Fort Mason/Fisherman Wharf areas. In general, the South of Market/Mission District galleries focus on local artists, in contrast to the other major high-rent districts that focus on high sales volume turnover.

S&A's market research indicates potential support for small gallery spaces at the Shipyard that feature on-site, neighborhood and San Francisco artists. Most of San Francisco's galleries that show local art are formed and operated by cooperatives of artists seeking space to show their work. As indicated in Table 21, cooperative galleries are typically small (1,800 to 3,000 square feet) and generally focus on show space rather than sales. Based on these data, S&A estimated that a maximum development of 2,500 square feet every five years could potentially be supported by on-base and neighborhood artists. As the artist colony and related cultural activities develop at the Shipyard, tourism could be a significant source of support for on-site galleries.

Prototype of Educational Facilities at the Shipyard

Based on community priorities and test marketing to educational facilities in the Bay Area, S&A included the dedication of approximately 460,000 square feet of nonprofit, private, and public educational institutions in the Shipyard's 30-year development program. Table 22 provides a sample of the potential space distribution of these facilities at the Shipyard and estimated annual participation rates. Type of space uses include private vocational training school, non-profit vocational training collaborative, public educational programs, horticulture and food training program, and art school and artist residency program. Brief summaries of the potential tenants follows.

Private Vocational Training School. The Sequoia Institute is a private vocational training school specializing in climate control and refrigeration, automotive technology and diesel technology. The Institute recently expanded from 35,000 square feet to 100,000 square feet in its Fremont facility and would be interested in further expansion. According to the Institute's president, the Shipyard would be an excellent location for a training center if favorable economic terms could be established. The Institute currently pays an average monthly lease rate of \$0.70 per square foot. Their minimum expansion needs is 125,000 square feet.

The Institute's current student population is 1,200, of which approximately three-quarters are Bay Area residents. The remaining one-quarter of their student population is from outside the Bay Area (southern California, Washington, Oregon, Idaho and Nevada). Approximately 88 percent of the student population are males in the 18 to 34 age group. Although tuition is very high (\$9,600 to \$12,000), many of the Institute's students obtain Job Training Partnership Act (JTPA) funds and other scholarships. The

Institute is an excellent example providing vocational training for high paying jobs to the existing Bayview/Hunters Point community.

Although the refrigeration and automotive industries have been national growth sectors, there are few local competitors to the Sequoia Institute. Hence, they are interested in expanding and touring the site for their future planning endeavors.

Nonprofit Vocational Training Collaborative. S&A surveyed five San Francisco nonprofit training organizations to determine their potential interest in relocating to or expanding at the Shipyard (see Table 23). Based on targeted interviews, an opportunity exists to create nonprofit vocational training collaboratives at the Shipyard focusing on meeting the training or recruitment needs of Shipyard businesses. Established organizations such as the Goodwill Industries and Arriba Juntos expressed interest in assisting with the development of collaborative programs at the Shipyard.

Public Educational Programs. S&A interviewed key representatives from the San Francisco Unified School District and San Francisco City College (SCC) to determine potential for public educational programs at the Shipyard. Although neither institution is prepared to occupy space at the Shipyard in the near term, long-term opportunities may be developed with creative programming and financing mechanisms.

SCC will commence the process of developing a Master Plan in the spring of 1996 to assess centralization versus decentralization of their facilities. SCC currently operates in approximately 1.3 million square feet of space, which they predominantly own. Their large real estate portfolio in San Francisco presents interesting opportunities for potential land swaps with the San Francisco Redevelopment Agency if SCC eventually seeks program consolidation.

The San Francisco Unified School District representative interviewed indicated that there is not sufficient population in the South Bayshore area at this point in time for the development of a new school in addition to the new middle school currently under construction. However, the facilities manager is interested in assessing residential and household projections for the area to determine whether a new school may be warranted in the future. In addition, SFUSD may be interested in participating in training programs at the Shipyard or developing school-to-work partnerships with the private enterprises.

Horticulture and Food Training Program. S&A surveyed three San Francisco nonprofit organic gardening organizations to determine their potential interest in expanding their programs at the Shipyard. In addition, S&A interviewed a key representative from a San Francisco-based culinary school to determine the school's interest in developing a satellite culinary program at the Shipyard. Based on these interviews, an opportunity exists to develop a full-service horticulture and food training program at the Shipyard. Established nonprofit organic gardening organizations such as The Garden Project, San Francisco League of Urban Gardeners (SLUG), and Project Open Hand/Fresh Start Farms expressed interest in assisting with the development of a horticulture (organic garden and composting) and food training program.

Art School and Artist in Residency Program. S&A surveyed several representatives from art schools and related artist-in-residency programs to determine their potential interest in relocating to or expanding at the Shipyard. Based on these interviews, an opportunity exists to create a for-profit art school and for-profit/nonprofit artist-in-residency program at the Shipyard. Specifically, a local art

school mentioned that the Shipyard represents a very desirable location because of its industrial, arts and culture, and housing components. In addition, an urban artist-in-residency program located at the Shipyard could positively impact the overall arts and culture component. According to a representative of a successful arts program based in Nebraska, a central component of their artist-in-residency program has been an arts educational outreach program targeted to residents of disenfranchised communities. This outreach program represents one of only four such projects in the country.

Conclusion

In sum, S&A included the dedication of approximately 460,000 square feet of education and training facilities and 95,000 square feet of cultural facilities in the Shipyard's 30-year development program. Based on the planning team's approach, these uses are programmed into the "cultural complex" located along the northeast waterfront and the "training center" located along the eastern waterfront as designated by the Plan.

In addition, S&A projects that 600 additional artist studios, or 300,000 square feet, could potentially be absorbed at the Shipyard during the 30-year build-out. This level of development would be relatively consistent with the 600 studios that have been developed in the eastern portion of San Francisco (i.e., South of Market to Bayview) in the past 30 years. The Plan promotes concentration of additional studios in the "mixed-use" area along the northern waterfront. The addition of 600 studios to the existing 300 studios at the Shipyard would more than likely make it the largest artist center in the country, potentially resulting in unique opportunities to attract regional and national tourism if other art-related activities are provided. As a result, S&A assumes that at least 12,500 square feet of gallery space could be supportable at the Shipyard during the 30-year build-out.

As described above, S&A developed a prototype profile of cultural and educational facilities at the Shipyard based on the goal of stimulating a healthy balance between private self-sustaining enterprises and nonprofit or public institutions requiring public funding. The projected financial viability of the Plan will be determined by modeling these distributions of public, nonprofit and private entities in S&A's financial feasibility model. Hence, the model will include assumptions regarding utilizing a portion of the project's cash flow (if any is generated) to subsidize some of the cultural and educational uses. Studies by the San Francisco Arts Commission (*The Impact of the Non-Profit Arts on the Economy of San Francisco*), and KPMG Peat Marwick (*The Arts: A Competitive Advantage for California*), provide useful data to justify potential subsidies as an essential operation cost of the Plan's implementation as a whole. Conclusions from the studies include the following:

- San Francisco's arts environment plays a positive role in attracting and retaining major employers.
- Non-profit arts organizations help revitalize particular economically declined neighborhoods. Their entry brings in customers, improves safety, enhances ambiance, and reveals renovation potential.
- Nonprofit arts organizations [in California] receive \$254.4 million in grants and donations. As a return on this investment, arts organizations and audiences generate more than \$2 billion of spending in California.

In addition, the educational services located at the Shipyard could potentially be packaged as a part of the financial incentive package to prospective Shipyard businesses by providing their individualized training and recruitment needs through on-site facilities.

RETAIL MARKET

Retail development is highly sensitive to location and access, since patrons are generally intercepted or drawn to convenient and central locations. The Shipyard's location, peripheral to San Francisco's population centers, preclude the site as a major destination retail center. However, limited "destination" retail opportunities exist for niche market retailers seeking synergies of the special on-site uses such as artist studios and educational activities. In addition, modest retail demand for neighborhood convenience retail (e.g., food stores, household supplies, office supplies, restaurants and cafes, etc.) will be driven by other land use activities at the Shipyard such as residential, commercial and cultural/education uses.

The convenience retail demand presents excellent opportunities for local Bayview/Hunters Point residents to own and operate businesses within the Shipyard such as restaurants, business supply stores, food and convenience stores, etc. The level of retail projected at the Shipyard will most likely not compete with existing neighborhood-serving retail along the Third Street corridor.

Absorption Forecast Methodology

S&A's retail absorption forecast is based on an algorithm (embedded in Summary Table 1) that calculates retail demand based on other land uses. For example, the algorithm includes formulas to calculate the demand generated by employees and residents at the Shipyard. Based on prior studies, it can be assumed that each employee generates demand for approximately five square feet of retail space based on annual expenditures of approximately \$1,000 per employee (for lunch, convenience goods, etc.) and retail outlets achieving gross sales of \$200 per square foot. Similarly, S&A has determined that residents generate demand for approximately 60 square feet of convenience retail per household.

In addition to convenience retail, S&A projects that at least 10,000 square feet of destination-oriented retail could be attracted to the Shipyard every five years. For example, S&A test marketed the Shipyard as a site to one of the West Coast's major discount art supply and catalog outlets. The company expressed interest in locating a large flagship store at the Shipyard of approximately 10,000 square feet, if favorable economic terms could be provided, due to the concentration of artists and future cultural activities planned for the Shipyard. The company believes that its large base of Bay Area catalog patrons would travel to the Shipyard for direct access to its supplies. Similar arts-related retail could most likely be attracted to the Shipyard by implementing a well-conceived and targeted marketing program.

Conclusion

S&A concurs with the Draft Plan's designation of retail within the mixed-used area along the northern waterfront. As indicated in Table 1, approximately 212,700 square feet of retail development could potentially be captured at the Shipyard during the 30-year build-out, or approximately 30,000 to 50,000 square feet per phase.

SUMMARY

S&A projects that the Shipyard could capture approximately 4.1 million square feet of real estate development (including rehabilitation of existing buildings). The primary factors driving the realization

of this level of development include competitive financial terms (i.e., land and lease rates) for prospective developers, a strategic marketing plan, an unencumbered development approvals process, and financial incentives to provide employment and business ownership opportunities to the local Bayview/Hunters Point community.

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TABLE 1
HUNTERS POINT SHIPYARD BUILD-OUT AND LAND UTILIZATION POTENTIAL (SQUARE FEET)
1996-2025

Land Use	Existing 1995	Phase I 1996 - 2000	Phase II 2001 - 2005	Phase III 2006 - 2010	Phase IV 2011 - 2015	Phase V 2016 - 2020	Phase VI 2021 - 2025	Total 1996 - 2025	WK&A (a)	Draft Plan (b)
Industrial and R&D	542,300	386,700	127,200	115,700	248,300	328,900	372,400	1,579,200	950,958	1,585,584 - 2,514,501
Industrial (c)	542,300	386,700	127,200	50,500	164,200	240,600	279,500	1,248,700	566,343	816,750 - 1,361,250
R&D (d)	0	0	0	65,200	84,100	88,300	92,900	330,500	384,615	768,834 - 1,153,251
Residential (e)		386,500	413,500	0	0	0	0	800,000	620,000	800,000
Mixed Use	158,080	116,000	261,800	190,900	192,500	193,400	193,900	1,148,500	588,235	1,065,042 - 2,130,084
Artist Studios (Units) (f)	120,500	60,000	60,000	60,000	60,000	60,000	60,000	360,000		
Live/Work (g)	0	0	100,000	100,000	100,000	100,000	100,000	500,000		
Galleries	0	0	2,500	2,500	2,500	2,500	2,500	12,500		
Retail (h)	0	42,300	53,000	28,400	30,000	30,900	31,400	216,000		
R&D (d)	37,580	13,700	46,300	0	0	0	0	60,000		
Cultural/Institutional		92,500	92,500	92,500	92,500	92,500	92,500	555,000	256,667	555,390 - 740,520
Education/Training (i)		76,700	76,700	76,700	76,700	76,700	76,700	460,000		
Cultural (j)		15,800	15,800	15,800	15,800	15,800	15,800	95,000		
Total	700,380	981,700	895,000	399,100	533,300	614,800	658,800	4,082,700	2,415,860	4,006,016 - 6,185,105

Notes:

- Build-out estimated for the period 1995 - 2015.
- Build-out estimated for the period 1995 - 2025.
- See Tables 2 through 4 for projection methodology. Industrial build-out includes 291,500 square feet in Phase 1 for MUNI.
- See Tables 5 through 7 for projection methodology.
- See Tables 8 through 10. Residential development potential is limited to the draft plan's 800 housing units. However, 500 additional live/work units are projected for the mixed-use area.
- Projection is based on the absorption of 600 new artists' studios over the 30-year period, averaging 500 square feet each, in addition to 180,500 square feet of existing studio space.
- Projection is based on the absorption of 500 live/work units, averaging 1,000 square feet each.
- Projection is based on demand generated for neighborhood convenience stores and restaurant/cafes by residents, workers, and visitors at the Shipyard, in addition to demand generated by the larger market area for specialty retailing (e.g., art supply stores, business supplies, etc.).
- Projection based on survey of existing training centers and schools in San Francisco and the Bay Area.
- The development of cultural facilities is not market-driven, but rather driven by public policy and available funding subsidies. The total cultural facilities space projection is calculated as the difference between the Draft Plan minimum total build-out potential for cultural/institutional uses and S&A's projected absorption of education/training facilities.

Source: Sedway & Associates
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TABLE 2
HUNTERS POINT SHIPYARD
MARKET DRIVEN EMPLOYMENT PROJECTIONS BY PHASE
1996 TO 2025
MAY 1995

Type	Phase 1 1996 - 2000	Phase 2 2001 - 2005	Phase 3 2006 - 2010	Phase 4 2011 - 2015	Phase 5 2016 - 2020	Phase 6 2021 - 2025	Phase Totals
Industrial	905	298	118	384	563	654	2,922
Research and Development	0	0	186	241	253	266	945
Education/Training	115	115	115	115	115	115	690
Cultural	24	24	24	24	24	24	143
Mixed Use	189	451	329	320	334	323	1,947
Residential	0	0	0	0	0	0	0
Open Space	0	0	0	0	0	0	0
Totals	1,233	887	773	1,084	1,288	1,381	6,647
Cumulative Totals	1,233	2,120	2,893	3,977	5,265	6,647	

Sources: City and County of San Francisco, The Planning Department; and Sedway & Associates.
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TABLE 3
HUNTERS POINT SHIPYARD
ESTIMATED CAPTURE AT HUNTERS POINT SHIPYARD OF PROJECTED NEW INDUSTRIAL DEVELOPMENT (a)
SAN FRANCISCO AND NORTH SAN MATEO COUNTY
1996 - 2025

	1994 Base	1996 Est.	Phase I 1996 - 2000	Phase II 2001 - 2005	Phase III 2006 - 2010	Phase IV 2011 - 2015	Phase V 2016 - 2020	Phase VI 2021 - 2025
Industrial Growth Rate (b)		0.5%	6.0%	5.6%	3.2% (c)	4.9%	5.2%	5.5%
Total Industrial Inventory (end of phase) (d)	48,658,643	48,905,000	51,820,000	54,702,700	56,448,800	59,187,200	62,246,100	65,657,900
Occupied Space (end of phase) (e)	44,960,586	45,188,220	47,881,700	50,545,300	52,158,700	54,689,000	57,515,400	60,667,900
Net New Demand (f)			2,921,100	2,663,600	1,613,400	2,530,300	2,826,400	3,152,500
Less Portion of Vacant Stock (g)			(1,017,500)	(1,074,100)	(1,108,400)	(1,162,100)	(1,222,200)	(1,289,200)
Total Potential New Development			1,903,600	1,689,500	505,000	1,368,200	1,604,200	1,863,300
Estimated Hunters Point Shipyard Capture Rate of New Space Demand (h)			5.0%	8.0%	10.0%	12.0%	15.0%	15.0%
Total Potential Absorption			95,200	127,200	50,500	164,200	240,600	279,600
Cumulative Potential Absorption			95,200	222,400	272,900	437,100	677,700	957,200

Notes:

- This analysis does not include existing vacant or occupied industrial space at the Hunters Point Shipyard.
- Phase III's lower projected growth rate is a result of the ABAG projections model, which incorporate a ten-year regional business cycle.
- The industrial growth rate is based on employment projections from Association of Bay Area Governments, "Projections 94" for San Francisco and North San Mateo County. Figures were adjusted to reflect the proportion of each economic sector's labor force that typically would occupy industrial space, as estimated by the Urban Land Institute's "Industrial Development Handbook."
- See Table 3.
- Occupied space is based on the current market area vacancy rate of 7.6% for industrial space. This vacancy rate is held constant. (See Table 3)
- Net New Demand is the difference between occupied space at the end of the current phase and occupied space at the end of the previous phase.
- S&A assumes that for each five-year interval, one quarter of the vacant stock in the market area will be absorbed by the new demand for industrial space. At year end 1994, approximately 3.7 million square feet of San Francisco and North San Mateo County industrial space was vacant. (See Table 3)
- The estimated capture rates are based on Bayview/Hunters Point's historical and current share of San Francisco and North San Mateo County industrial building and vacant zoned land inventory (see Table 4) adjusted for the subject site's access, infrastructure, environment and other conditions, and assuming rental rates are slightly lower than market area rates. S&A assumes Hunters Point Shipyard capture rate increases as these market factors improve.

Sources: Association of Bay Area Governments (ABAG), "Projections '94"; Grubb & Ellis; CB Commercial; and Sedway & Associates.
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TABLE 4
HUNTERS POINT SHIPYARD
INDUSTRIAL EMPLOYMENT GROWTH RATE PROJECTIONS
SAN FRANCISCO AND NORTH SAN MATEO COUNTY
1990 - 2025

Industry	1990	1995	2000	2005	2010	2015	2020	2025
Employment Projections								
Agriculture/Mining	2,720	2,550	2,590	2,560	2,490	2,441	2,394	2,347
Construction	24,464	23,726	27,323	29,493	27,048	26,919	26,798	26,683
Manufacturing	51,988	53,667	55,739	54,356	54,392	53,811	53,293	52,838
Transp., Comm., Utilities	49,696	51,860	53,130	56,394	55,800	57,185	58,604	60,059
Wholesale Trade	40,902	37,243	36,611	39,914	38,619	39,670	40,754	41,873
Retail Trade	98,910	95,070	98,760	100,880	105,340	108,798	112,373	116,069
F.I.R.E.	84,513	76,306	76,708	79,004	83,073	86,454	89,976	93,644
Services	245,900	250,270	276,740	313,550	341,670	378,370	419,078	464,235
Government	67,626	61,598	64,240	67,570	66,860	68,210	69,567	70,992
Total Jobs	666,720	652,290	693,840	743,720	775,290	821,859	872,857	928,739
Employment Requiring Industrial Space								
Agriculture/Mining	136	128	130	128	125	122	120	117
Construction	1,223	1,186	1,366	1,475	1,352	1,346	1,340	1,334
Manufacturing	51,988	53,667	55,739	54,356	54,392	53,811	53,293	52,838
Transp., Comm., Utilities	14,909	15,558	15,939	16,918	16,740	17,155	17,581	18,018
Wholesale Trade	16,361	14,897	14,645	15,966	15,447	15,868	16,302	16,749
Retail Trade	0	0	0	0	0	0	0	0
F.I.R.E.	0	0	0	0	0	0	0	0
Services	49,180	50,054	55,748	62,710	68,334	75,674	83,816	92,847
Government	0	0	0	0	0	0	0	0
Total Jobs	133,797	135,490	143,566	151,552	156,390	163,977	172,451	181,903
Industrial Employment Growth Rate		1.3%	6.0%	5.6%	3.2%	4.9%	5.2%	5.5%

Sources: Association of Bay Area Governments (ABAG), "Projections '94"; and Sedway & Associates.
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TABLE 6
HUNTERS POINT SHIPYARD
SPACE INVENTORY - INDUSTRIAL BUILDINGS (SQUARE FEET)
SAN FRANCISCO & NORTH SAN MATEO COUNTY (a)

	1985	1990	1991	1992	1993	1994	Five-Year Total/ Annual Average Compound Growth Rate (%)
Industrial Inventory							
San Francisco	47,290,065	48,517,742	48,732,545	48,732,545	48,732,545	48,658,643	0.1%
North San Mateo County	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	27,500,000	0.0%
	19,790,065	21,017,742	21,232,545	21,232,545	21,232,545	21,158,643	0.2%
Annual Construction							
San Francisco	---	306,919 (b)	214,803	0	0	(73,902)	447,820
North San Mateo County	---	0 (b)	0	0	0	0	0
	---	306,919 (b)	214,803	0	0	(73,902)	447,820
Square Feet Occupied							
San Francisco	43,271,440	44,338,925	43,926,556	44,362,789	44,962,483	44,962,214	0.3%
North San Mateo County	25,025,000	25,025,000	24,750,000	24,750,000	25,231,250	25,162,500	0.1%
	18,246,440	19,313,925	19,176,556	19,612,789	19,731,233	19,789,714	0.6%
Square Feet Vacant							
San Francisco	4,018,625	4,178,817	4,805,989	4,369,766	3,770,062	3,706,429	---
North San Mateo County	2,475,000	2,475,000	2,750,000	2,750,000	2,268,750	2,337,500	---
	1,543,625	1,703,817	2,055,989	1,619,766	1,501,312	1,368,929	---
Vacancy Rate							
San Francisco	8.5%	8.5%	9.9%	9.0%	7.7%	7.6%	---
North San Mateo County	9.0%	9.0%	10.0%	10.0%	8.3%	8.5%	---
	7.8%	8.1%	9.7%	7.6%	7.1%	6.5%	---
Annual Net Absorption							
San Francisco	---	213,497	(412,369)	436,233	599,694	(10,269)	826,786
North San Mateo County	---	0	(275,000)	0	481,250	(68,750)	137,500
	---	213,497	(137,369)	436,233	118,444	58,481	689,286
Typical Rate For Leases							
High Tech/R&D	---	\$7.80 to \$13.80	\$7.80 to \$12.60	\$7.80 to \$12.60	\$7.80 to \$13.20	\$7.80 to \$13.20	---
General Manufacturing/Warehouse	---	\$3.60 to \$7.20	\$2.88 to \$8.64	\$2.88 to \$9.00	\$3.00 to \$7.44	\$3.36 to \$7.80	---
Typical Price for Land in Industrial Parks (per Sq.Ft. of Land)							
San Francisco	---	---	---	---	---	\$25.00 to \$30.00	---
North San Mateo County	---	---	---	---	---	\$15.00 to \$20.00	---

Notes:

- a. North San Mateo County includes Daly City, Brisbane, South San Francisco, & San Bruno.
b. 1990 construction figures represent the annual average change in Industrial Inventory from 1985 to 1990.

Sources: San Mateo County Economic Development Association (SAMCEDA); Grubb & Ellis; CB Commercial; California Employment Development Dept.;
and Sedway & Associates.
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TABLE 6
INDUSTRIAL BUILDING SPACE, RAW LAND INVENTORY, AND MARKET SHARE
HUNTERS POINT/BAYVIEW, SAN FRANCISCO, AND NORTH SAN MATEO COUNTY
1995

	Hunters Point/ Bayview (a)	San Francisco	North San Mateo County	Total Market Area	Bayview Share of Total Market
Industrial Space (b)					
Building Sq. Ft.	4,409,537	27,500,000	21,158,643	48,658,643	9.1%
Vacant Sq. Ft.	263,815	2,337,500	1,368,929	3,706,429	7.1%
Occupied Building Sq. Ft.	4,145,722	25,162,500	19,789,714	44,952,214	9.2%
Industrial Land (c)					
Total Zoned Acres	1,629	3,522	2,418	5,940	27.4%
Vacant Acres	385	850	550	1,400	27.5%

Notes:

- a. Hunters Point/Bayview does not include existing Hunters Point Shipyard building and land area.
- b. Industrial building area and vacant space for the Hunters Point Bayview area derived from Blickman Turkus data. San Francisco data compiled by S&A from Grubb & Ellis and CB Commercial. North San Mateo County data compiled by San Mateo County Economic Development Association, Inc. (SAMCEDA)
- c. Industrial zoned land and vacant area based on ABAG and San Francisco Planning Department documents.

Sources: Grubb & Ellis; CB Commercial; SAMCEDA, San Francisco Planning Department; and
 Sedway & Associates.

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TABLE 7
SUMMARY RENTAL RATES
HUNTERS POINT SHIPYARD INDUSTRIAL RENT POTENTIAL
MAY 1995

Type	Square Footage	Mission Bay/South Bayshore Market Average Rental Rate	Hunters Point Shipyards Existing Average Rental Rate	Estimated Hunters Point Shipyards Market Average Rental Rate
Small Space	1 - 2,500	\$0.75	\$0.45	\$0.45
Diminutive Industrial	2,501 - 25,000	\$0.36	\$0.16	\$0.25
Bulk Industrial	25,001 - 99,999	\$0.35	\$0.15	\$0.20
Big Bulk Industrial	100,000 -	N/A	\$0.07	\$0.15

Notes:

Rental rates are per rentable square foot per month. Market rental rates for Hunters Point Shipyards assumes that the buildings are in reasonable condition as compared to competitive buildings. Tenant improvements for the space at Hunters Point is assumed to be minimal with standard leasing commissions.

Source: Sedway & Associates.
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TABLE 8
COMPARABLE INDUSTRIAL LEASE TRANSACTIONS
MISSION BAY AND SOUTH BAYSHORE
MAY 1995
PAGE 1 OF 2

Comp Num.	Project/ Location/ Owner	Tenant Name	Industry/ Use	Face Rate \$/SF/MO	NNN or Gross	Building Type	Year Built	Net Rentable Project Size Sq. Ft.	Square Feet Leased	Lease Effective Date	Lease Term	New or Renew	Rental Steps When Amount	# of Mos. Free Rent
1	Mission Bay 1050 Third Street Catellus Development Corp.	N/A	Entertainment/ Roller Hockey Rink	\$0.330	Industrial Gross	N/A	1956	27,000	27,000	01-Jan-95	3 years	New	mo. 13 \$0.010 mo. 15 \$0.033 mo. 25 \$0.014	2
2	Mission Bay 1780 Third Street Catellus Development Corp.	N/A	Storage	\$0.400	Industrial Gross	N/A	~1980's	5,400	5,400	01-Apr-95	3 months	New/ Relocation	N/A N/A	0
3	Mission Bay 299 Illinois Street Catellus Development Corp.	N/A	Newspaper Circulation	\$0.345	Industrial Gross	N/A	~1980's	152,888	22,000	01-Jun-94	3 years	New	mo. 13 \$0.015 mo. 25 \$0.015	1
4	Mission Bay 299 Illinois Street Catellus Development Corp.	N/A	Newspaper Circulation	\$0.345	Industrial Gross	N/A	~1980's	152,888	16,000	01-Mar-95	25 months	New/ Expansion	mo. 13 \$0.015 mo. 25 \$0.015	0
5	Mission Bay 770 Mariposa Catellus Development Corp.	N/A	Warehouse	\$0.390	Industrial Gross	N/A	~1980's	65,880	23,000	01-Aug-94	3 years	New	mo. 13 \$0.010 mo. 25 \$0.010	0
6	N/A 3150 Third Street Martin Gawilec	Knitware	Warehouse	\$0.380	Industrial Gross	N/A	N/A	N/A	15,000	Jul-94	5 years	N/A	Annual CPI	N/A
7	N/A 2025-2045 McKinnon Ave. Ronai & Pamela Thompson	Tilla	Warehouse	\$0.380	Industrial Gross	N/A	N/A	N/A	25,521	Jul-94	3 years	N/A	N/A	N/A
8	N/A 180-200 Napoleon Street San Francisco Warehouse Company	Start to Finish Bicycles	Warehouse	\$0.380	Industrial Gross	N/A	N/A	N/A	25,000	May-94	5 years	N/A	N/A	N/A
9	N/A 208 Pennsylvania 208 Electro Rep	Fergazi Paints	Warehouse	\$0.310 Effective	Industrial Gross	N/A	N/A	N/A	23,500	May-94	4 years	N/A	N/A	N/A

Sources: Catellus Development Corporation; & Sedway & Associates.
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TABLE 8
COMPARABLE INDUSTRIAL LEASE TRANSACTIONS
MISSION BAY AND SOUTH BAYSHORE
MAY 1995
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Comp Num.	Project/ Location/ Owner	Tenant Name	Industry/ Use	Face Rate \$/SF/MO	NNN or Gross	Building Type	Year Built	Net Rentable Project Size Sq. Ft.	Square Feet Leased	Lease Effective Date	Lease Term	New or Renew	Rental Steps When	Rental Steps Amount	# of Mos. Free Rent
10	N/A 780 Toland Street Meyer & Meyer	United Industrial Supply	N/A	\$0.300	Industrial Gross	Concrete tilt-up	N/A	N/A	14,800	Nov-93	5 years	N/A	mo. 13 mo. 25 mo. 37 mo. 49	\$0.07 CPI CPI CPI	3
11	N/A 701 18th Street City Electric Supply	Industrial Passenger Service	N/A	\$0.400 Effective	Industrial Gross	N/A	N/A	N/A	10,000	Sep-93	3 years	N/A	N/A	N/A	N/A
12	N/A 1445 Yosemite Avenue Joseph Zimmerman	Progressive Trust	Warehouse	\$0.310	Industrial Gross	N/A	N/A	N/A	5,000	Jan-94	5 years	N/A	N/A	N/A	2
13	N/A 5700 Third Street Lincoln Bayview	Downtown Rehearsal	N/A	\$0.280	Industrial Gross	N/A	N/A	N/A	18,252	May-93	5 years	N/A	Annual	4.00%	0
14	N/A 45 Williams	N/A	N/A	\$0.250	Industrial Gross	Wood Frame	N/A	25,000	25,000	N/A	N/A	N/A	N/A	N/A	N/A
15	N/A 1650 Evans	N/A	N/A	\$0.330	Industrial Gross	Metal	N/A	18,000	18,000	N/A	N/A	N/A	N/A	N/A	N/A
16	N/A 1500 Davidson	N/A	N/A	\$0.300	Industrial Gross	Concrete	N/A	10,000	10,000	N/A	N/A	N/A	N/A	N/A	N/A
17	N/A 2040 Oakdale	N/A	N/A	\$0.400	Industrial Gross	Concrete	N/A	20,000	20,000	N/A	N/A	N/A	N/A	N/A	N/A
18	N/A 3003-95 Third Street	N/A	N/A	\$0.300	Industrial Gross	Concrete	N/A	25,000	25,000	N/A	N/A	N/A	N/A	N/A	N/A
19	N/A 3003-95 Third Street	N/A	N/A	\$0.370	Industrial Gross	Concrete	N/A	21,000	21,000	N/A	N/A	N/A	N/A	N/A	N/A
20	N/A 1225 Minnesota	N/A	N/A	\$0.500	Industrial Gross	Concrete	N/A	20,000	20,000	N/A	N/A	N/A	N/A	N/A	N/A
21	N/A 695 Minnesota	N/A	N/A	\$0.450	Industrial Gross	Concrete	N/A	25,000	25,000	N/A	N/A	N/A	N/A	N/A	N/A

Sources: Catalus Development Corporation, & Sedway & Associates.
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**TABLE 9
HUNTERS POINT SHIPYARD
ESTIMATED CAPTURE AT THE HUNTERS POINT SHIPYARD OF PROJECTED NEW HIGH-TECHNOLOGY R&D DEVELOPMENT (a)**

	Phase I 1996 - 2000	Phase II 2001 - 2005	Phase III 2006 - 2010	Phase IV 2011 - 2015	Phase V 2016 - 2020	Phase VI 2021 - 2025
San Francisco R&D Job Growth	380	480	470	540	588	640
North San Mateo R&D Job Growth	450	450	510	470	470	470
New R&D Jobs in Market Area	830	930	980	1,010	1,058	1,110
Estimated Square Feet per Employee (b)	350	350	350	350	350	350
Gross Demand For R&D	290,500	325,500	343,000	353,500	370,300	388,500
Less Portion of Vacant Stock (c)	(17,100)	(17,100)	(17,100)	(17,100)	(17,100)	(17,100)
Total Potential New Development	273,400	308,400	325,900	336,400	353,200	371,400
Estimated Hunters Point Shipyard Capture Rate (d)	5%	15%	20%	25%	25%	25%
Total Potential Absorption	13,700	46,300	65,200	84,100	88,300	92,900
Cumulative Potential Absorption	13,700	60,000	125,200	209,300	297,600	390,500

Notes:

- This analysis does not include existing vacant or occupied industrial space at the Hunters Point Shipyard.
- From Association of Bay Area Governments "1987 Input-Output Model and Economic Multipliers" for the San Francisco Bay Area.
- S&A assumes that for each five-year interval, one quarter of the vacant stock in the market area will be absorbed by the new demand for industrial space. 68,257 square feet of North San Mateo County R&D space was vacant. (see Table 6) Existing San Francisco R&D space is considered to minimal to affect this analysis.
- The low initial capture rates are based on San Francisco's poor historical performance in capturing new R&D development.

Sources: Association of Bay Area Governments (ABAG), "Projections '94"; Grubb & Ellis; CB Commercial; and Sedway & Associates.
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TABLE 10
HUNTERS POINT SHIPYARD
SPACE INVENTORY - RESEARCH AND DEVELOPMENT (SQUARE FEET)
NORTH SAN MATEO COUNTY (a)

	1986	1990	1991	1992	1993	1994	Five-Year Total/ Annual Average Compound Growth Rate (%)
R&D Inventory	112,832	877,636	869,041	869,041	869,041	929,537	1.4%
Annual Construction	---	191,201 (b)	(8,595)	0	0	60,496	243,102
Square Feet Occupied	53,347	578,172	793,030	816,323	758,128	861,280	10.5%
Square Feet Vacant	59,485	299,464	76,011	52,718	110,913	68,257	---
Vacancy Rate	52.7%	34.1%	8.7%	6.1%	12.8%	7.3%	---
Annual Net Absorption	---	131,206	214,858	23,293	(58,195)	103,152	414,314
Typical Rate For Leases							
High Tech/R&D	---	\$9.00 to \$13.80	\$10.20 to \$12.60	\$11.40 to \$12.60	\$9.60 to \$13.20	\$9.60 to \$13.20	---
General Manufacturing/Warehouse	---	\$3.96 to \$6.60	\$2.88 to \$8.64	\$2.88 to \$9.00	\$4.20 to \$7.44	\$4.20 to \$7.80	---
Typical Price for Land in Industrial Parks (per Sq.Ft. of Land)							
San Francisco	---	---	---	---	---	\$25.00 - \$30.00	---
North San Mateo County	---	---	---	---	---	\$15.00 - \$20.00	---

Notes:

- a. North San Mateo County Includes Daly City, Brisbane, South San Francisco, & San Bruno. San Francisco R&D space inventory is not available.
- b. 1990 construction figure represents the annualized change in industrial inventory from 1985 to 1990.

Sources: San Mateo County Economic Development Association (SAMCEDA); Grubb & Ellis; CB Commercial; California Employment Development Dept.; and Sedway & Associates.

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TABLE 11
COMPARABLE RESIDENTIAL DEVELOPMENTS CURRENTLY SELLING IN SOUTHEAST AREA OF SAN FRANCISCO
MARCH 1995

Project/ Location/ Developer	Type	Market/ Affordable	Total Units Built	Unit Type (Bldgs)	Unit Size (Sq.Ft.)	Sales Price Range	Price Per Sq.Ft.	Opening Date	Units Closed Since Opening	Date Last Unit Sold	Monthly Absorption Since Opening	Notes
Hillside Village Hudson & Keith	Single Fam. Single Fam.	Mkt Aff	25 32 62	2/2 2/2	1,100 - 1,100 1,100 - 1,100	\$179,500 - \$179,500 \$102,000 - \$153,000	\$163 - \$163 \$93 - \$139	May 1991	24 35 59	Not sold	1.0 1.5 2.6	
City View Whitney Young & Hudson	Single Fam. Single Fam.	Mkt Aff	2 13 15	3/2 3/2	1,500 - 1,500 1,500 - 1,500	\$200,000 - \$210,000 \$102,000 - \$153,000	\$133 - \$140 \$68 - \$102	October 1990	2 13 15	October 1992	0.1 0.2 0.6	
Candle Stick View Ingles & Kiska	Duplex Attached	Aff Aff	0 0 0	2/1.5 3/2	1,100 - 1,100 1,300 - 1,300	\$108,000 - \$124,000 \$120,000 - \$141,000	\$96 - \$113 \$92 - \$108	August 1995	Not yet opened	Not yet opened	Not yet opened	Targeting 70%-80% MHI Response has been good. Public housing across the street needs renovation.
Morgan Heights Ean & Jerrold	Attached Attached	Aff Aff	36 27 63	2/2 2/2	1,156 - 1,156 1,172 - 1,317	\$104,000 - \$108,000 \$108,000 - \$110,000	\$90 - \$93 \$84 - \$92	1989	36 27 63	1990	3.0 2.3 5.3	Resold 5 in 6 years for assessed market value of approx. \$165,000.
Stoneridge Stoneridge Lane 1750 Geneva Ave. L.L. & V. Associates 337-8800	Attached Attached	Mkt Mkt	36 0 36	2/2 3/2	1,068 - 1,132 1,588 - 1,588	\$139,000 - \$190,950	\$120 - \$130	April 1994 Sept. 1994 June 1995 Late 1995 1996 1996	Sold 20 16 taking reservation 0 0 0 36	Available 20 16 12 16 12 18 94	1.7 1.3 0.0 0.0 0.0 0.0 3.0	
Innes Ave. Homes 1400 Block of Innes	Single Fam.	Aff	16 total	3/2 4/2	1,300 - 1,300 1,300 - 1,300	\$132,000 - \$132,000 \$138,000 - \$138,000	\$102 - \$102 \$106 - \$106	May 1989	16	May 1989	16	All units sold immediately through a lottery. Had a wait list.
Las Villas LaSalle & Newcombe	Single Fam.	Aff Mkt	0 0 0	3/2.5 3/2.5	(prices yet to be determined)			May 1995	Not yet opened	Not yet opened	Not yet opened	The SFRA has ten buyers lined up so far, assuming pricing consistent with previous SFRA projects.

Sources: San Francisco Redevelopment Agency, San Francisco City Planning Department, and Seaway & Associates.
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TABLE 12
CONDOMINIUM LIVE/WORK PROJECTS
SAN FRANCISCO
MAY 1995
PAGE 1 OF 2

Type/ Project/ Address/ Developer	Number of Units/ Zoning	Year Built/ Renovated	Units Sold (%)	Building (Sq. Ft.)	Number of Stories	Unit Size Range (Sq. Ft.)	Average (Sq. Ft.)	Purchase Price/ (Per Sq. Ft.)	Condominium Fees	Sales Price	Construction Type
Renovation											
The Lofts at 601 Fourth Street 601 Fourth Street 601 Fourth Street Associates	85 SSO, Service/ Secondary Office	1916/ 1989	100.00%	151,163 gross	3	953 - 2,213	1,400	\$160 - \$200	From \$165 per month	\$170,000 - \$495,000	Concrete block
York Street Studios 600 York Street/2711 18th Street York Street Live/Work L.P.	25 M-1, Arts Activity Use Restriction	1921/ 1991	44.00%	30,000 gross	3	600 - 1,275	920	\$200	Estimated at \$150 - \$190 per unit	\$135,000 - \$275,000	Reinforced concrete
Potter Square 701 Minnesota	50	1993	100.00%	63,750 gross		780 - 1,840	1,275	\$227 - \$201	\$130 - \$210	N/A	N/A
The Lofts at 355 Bryant Street 355 Bryant Street 355 Bryant Street Associates	44 SSO, Service/ Secondary Office	1921/ 1989	100.00%	83,222 gross	4	1,200-2,100	1,600	\$170 - \$215	N/A	\$210,000 - \$450,000	Brick and timber
The Clocktower Building (a) 461 - 467 2nd Street Clocktower Associates	127 SSO, Service/ Secondary Office	1907/ lower 1919 1991	100.00%	209,149 gross	6	450 - 1,900	~1,175	\$222 - \$275	N/A	\$100,000 - \$415,000	Brick and timber
701 Minnesota Street Mission Land Company and 701 Minnesota	4 M-2, Arts Activity Use Restriction	1907/ 1992	N/A	62,000 net	2	736 - 1,040	888	N/A	N/A	N/A	Type 5 Masonry
New Construction											
18th & Arkansas Lofts-Phase 1 (b) 1615 18th Street	18 Affordable Units M-1 30 Market Rate Units	1994	N/A	~10,800 net	N/A	500 - 700	~600	N/A	N/A	\$70,000 \$125,000/ \$140,000 \$305,000	Wood frame
485/487 Tehama Street Gerry Dean/Gerry Gallagher	4 RSD	1991	N/A	4,600 gross 4,200 net	3	N/A	1,050	N/A	N/A	N/A	Wood frame
Total/Average (c)										1,243	

Notes:

- (a) Excluding the penthouse square footage.
- (b) Partnership between Artspace Development Corporation and McKenzie, Rose, & Holliday.
- (c) Total/Average calculation does not include 30 market rate units at 18th & Arkansas Lofts - Phase I.

Sources: "San Francisco Live/Work: A Market Survey," Arthouse, a joint project of California Lawyers for the Arts and the San Francisco Arts Commission; Sedway & Associates.
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TABLE 12
CONDOMINIUM LIVE/WORK PROJECTS
SAN FRANCISCO
MAY 1995
PAGE 2 OF 2

Type/ Project/ Address Developer	Ceiling Height	Roll-Up Door	Floor Covering	Amenities		Comments:
				Full Kitchen Bathrooms	Common Space	
Renovation						
The Lofts at 601 Fourth Street 601 Fourth Street 601 Fourth Street Associates	14' - 16'	No	Industrial grade base carpet	All units, two sinks in bathrooms	Roof deck, conference room available for rental, front lobby	Parking: one space per unit in secure garage, storage available
York Street Studios 600 York Street/2711 18th Street York Street Live/Work L.P.	11', 10', 12'	Freight elevator	Concrete	All units; no refrigerator	Laundry facilities, roof deck	No parking on site Condominium fees includes heat and hot water
Potrero Square 701 Minnesota	N/A	N/A	N/A	N/A	N/A	
The Lofts at 355 Bryant Street 355 Bryant Street 355 Bryant Street Associates	13' - 18'	No	Industrial grade base carpet	All units, two sinks in bathrooms	Roof deck, entry courtyard, lobby	Parking: one space per unit in adjacent parking lot
The Clocktower Building (a) 461 - 467 2nd Street Clocktower Associates	13' - 17'	No	Industrial grade base carpet	All units	Interior light court patios, lobby, garage parking-one per unit	Three interconnected brick and timber buildings.
701 Minnesota Street Mission Land Company and 701 Minnesota	-20'	All units	Concrete	All units	Court yard areas: 2,500 square feet for each unit	Mezzanine space Parking: one space per unit in a secure garage
New Construction						
18th & Arkansas Lofts-Phase 1 (b) 1615 18th Street	14'	Freight elevator	Concrete	All units	Shared production, meeting, exhibition, performance space	On site underground park- ing; 18 subsidized condos are part of 29 unit phase
485/487 Tehama Street Gerry Dean/Gerry Gallagher	16'	Yes	Commercial carpet	All units	250 square foot backyard deck, park- ing area in basement	Zoning: Residential/Service Mixed Use District, 40' height limit; 2,000 sq. ft.
Notes: (a) Excluding the penthouse space. (b) Partnership between Artspace Development Corporation and McKenzie, Rose, & Holliday. (c) Total/Average calculation does not include 30 market rate units at 18th & Arkansas Lofts - Phase I.						
Sources: "San Francisco Live/Work: A Market Survey," Arthouse, a joint project of California Lawyers for the Arts and the San Francisco Arts Commission; Sedway & Associates.						

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TABLE 13
RENTAL LIVE/WORK PROJECTS
SAN FRANCISCO/OAKLAND
MAY 1995
PAGE 1 OF 4

Type/ Project/ Address/ Developer/City	Number of Units/ Zoning	Year Built/ Renovated	Occupancy Rate (%)	Building (Sq. Ft.)	Number of Stories	Unit Size Range (Sq. Ft.)	Average Rent (Per Sq. Ft.)	Tenant Expenses	Tenant Improvement Allowance	Lease Term	Construction Type
Renovation											
Developing Environments (1) 540 Alabama at 18th St. Developing Environments, Inc./SF	39 M-1, 50' height limit Residential Hotel with variances	1920's/ 1976-1979	100.00%	33,790 net, top two floors	3	474 - 2,188	1,000	\$0.39	Negotiable, as long as up to code	Month to Month	Reinforced Concrete
Sears Building 3435 Army Street Berline & Associates/SF	57 NC-3, Neighborhood Commercial	1920's/ 1978	100.00%	120,000 - gross entire building 68,000 - gross live/work	3	520 - 1,800	1,000	\$0.75	Electricity (separate meters per unit)	1 year, typically	Reinforced Concrete, Brick facade
N/A (1) 731 Florida Street Sunset West Properties/SF	9 M-1, Arts Activity Use Restriction	1902/ 1986	89.00%	15,357 gross; 10,000 net	2	700 - 1,200	1,000	\$0.78 - \$1.00	Gas, electric	Ranges from mo-to-mo to five years	Front: wood Rear: brick
N/A 530 Hampshire Street David Allen Trust/SF	11 M-1, Arts Activity Use Restriction	1930's/ 1991	100.00%	Net: 44,000 24,000 live/ work	4	1,150 - 3,000	~2,000	\$0.76 - \$0.98	Separate meters for gas and electric, percentage of garbage and water	Negotiable from 1 to 5 years	Steel I-Beam with concrete fill for fire protection
N/A 1049 Market Street Rifkin Realty/SF	6 C-3G (Commercial, Downtown Office General)	1907/ 1991	77.00%	56,800 entire building	6	700 - 1,600	1,100	\$0.95 - \$1.05	Electricity, pro rata share of CAM charges	Negotiable long term commercial	Type 3 Sprink- lered, masonry with lumber
Minnesota Lofts (1) 601 Minnesota Street Roxane Mankin Co./SF	19 M-2, 50' height limit	1929/ 1988	100.00%	43,668 entire building	2	900 - 1,000	1,100	\$1.00 Starting rent	Unit cleaning, elec., gas, pro-rated share of bldg. taxes, insur., CAM charges	Month to month due to condominium conversion	Corrugated metal and wood pillars
Nibbi Lofts 801 Minnesota Street Nibbi Investments/SF	22 M-2, 50' height limit	1960 - 1970/ 1989	100.00%	18,700	1	850	850	\$1.17	Gas, electric	1 - 2 years	Metal frame
New Construction											
30 Washburn Street/15 Grace Street Dick Fire & Company/SF	41 SLR, Service/Light Ind./Residential	1991	N/A	5,500 live/work	3 including garage	1,200 - 1,500	~1,350	\$0.92/\$0.87	Gas, electric, garbage, water	3 years	Metal frame, wood and stucco
SF: Total/Average							950	\$0.88			

Notes:
(1) Information per 1991 Survey.
SF= San Francisco; OAK = Oakland.

Sources: "San Francisco Live/Work: A Market Survey," a joint project of California Lawyers for the Arts and the San Francisco Arts Commission; Sedway & Associates.
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TABLE 13
RENTAL LIVE/WORK PROJECTS
SAN FRANCISCO/OAKLAND
MAY 1995
PAGE 2 OF 4

Type/ Project/ Address Developer/City	Ceiling Height	Roll-Up Door	Floor Covering	Amenities		Common Space	Buyer/Tenant Profile:		Comments
				Full Kitchen Bathrooms	Area: Live/ Work				
Renovation									
Developing Environments (1) 540 Alabama at 18th St. Developing Environments, Inc./SF	11 1/2 - 13'	Commercial level	Concrete	Some units: full kitchens, communal bathrooms		Exhibition/open space on second floor, common use studio space, laundry areas, bathrooms	N/A		First story commercial, 2 upper stories are live/work
Sears Building 3435 Army Street Berline & Associates/SF	14'	Loading dock	Concrete, carpet or wood	Yes, all units		Roof deck	N/A		2 upper stories are live/work Approved under Section 204.4(b)
N/A (1) 731 Florida Street Sunset West Properties/SF	12' in most units	Yes	Lower: concrete, Top: wood	All units		None	N/A		Approved under Section 204.4(b)
N/A 530 Hampshire Street David Allen Trust/SF	Third floor: 12 1/2' Fourth floor: 14'	Lower floor	3rd: Concrete and RDX; 4th: synthetic concrete	All units		Roof deck, balconies	N/A		2 upper stories are live/work Secured garage parking spaces at \$75 per month
N/A 1049 Market Street Rifkin Realty/SF	6th floor: 12'	No	Varnished oriented strand board	All units		Ground floor lobby area	N/A		Sixth story is live/work Zoning: Arts Activity Use Restriction
Minnesota Lofts (1) 601 Minnesota Street Roxane Markin Co./SF	17' - 21' 18' average	No	Ground: concrete; 2nd: wood	All live/work units. Some work-only units have kitchens		Roof deck	N/A		12 work-only units Mezzanine level Approved under Section 204.4(b)
Nibbi Lofts 801 Minnesota Street Nibbi Investments/SF	16' - 26'	No	Vinyl tile over concrete; carpet over wood	All units		Laundry	N/A		Restriction. Track lights, garbage disposal, and forced air heaters. Parking spaces rent for \$50 per mo.
New Construction									
30 Washburn Street/15 Grace Street Dick Fiere & Company/SF	12' - 23'	Yes, 11'	Carpet	All units		Stairways	N/A		Garage parking on site All units have galley kitchen, fireplaces
Notes: (1) Information per 1991 Survey. SF= San Francisco; OAK = Oakland. Sources: "San Francisco Live/Work: A Market Survey," a joint project of California Lawyers for the Arts and the San Francisco Arts Commission; Sadway D:\28994\WORKR4\WK4									

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TABLE 13
RENTAL LIVE/WORK PROJECTS
SAN FRANCISCO/OAKLAND
MAY 1995
PAGE 3 OF 4

Type/ Project/ Address/ Developer/City	Number of Units/ Zoning	Year Built/ Renovated	Occupancy Rate (%)	Building (Sq. Ft.)	Number of Stories	Unit Size Range (Sq. Ft.)	Average Rent (Per Sq. Ft.)	Tenant Expenses	Tenant Improvement Allowance	Lease Term	Construction Type
Renovation											
West Coast Macaroni Building 1250 57th Avenue N/A Oakland/ 9	12	1930/ 1973	100.00%	~17,000	2	1,300-1,500	\$0.45 - \$0.50 varies depending on location	Separate billing for utilities	None	Month to Month	N/A
2834 Ford Street Oakland/ 10	50	N/A/ 1988	96.00%	~70,000	3	700 - 2,400	\$0.50 - \$0.55	Varies: bill back for water, garbage, CAM fee	None	1 year	Reinforced concrete
Exchange Studios 527 23rd Avenue Oakland/ 11	39	N/A/ 1994	100.00%	43,100	2	1,000-1,350	\$0.75 - \$0.83	Tenant pays for all utilities except water and garbage	None	1 year	Reinforced masonry
Oakland: Total/Average	101					1,286	\$0.00				

Notes:
(1) Information per 1991 Survey.
SF= San Francisco; OAK = Oakland.

Sources: "San Francisco Live/Work: A Market Survey," a joint project of California Lawyers for the Arts and the San Francisco Arts Commission; Sedway & Associates.
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TABLE 13
RENTAL LIVE/WORK PROJECTS
SAN FRANCISCO/OAKLAND
MAY 1995
PAGE 4 OF 4

Type/ Project/ Address/ Developer/City	Amenities				Buyer/Tenant Profile:		Comments:
	Ceiling Height	Roll-Up Door	Floor Covering	Full Kitchen Bathrooms	Common Space	Area: Live/ Work	
Renovation							
West Coast Macaroni Building 1250 57th Avenue N/A/OAK	11 1/2 - 13'	N/A	Concrete on ground, wood on second	All units	N/A	N/A	Gated, secured parking No traffic congestion: subject located at end of dead end street
2934 Ford Street N/A/OAK	10' - 14'	15 - 20 units	Concrete	Partial to full kitchens, full bathrooms	Planter boxes through- out. Tenants enjoy plot of land for planting	Not preferred: musicians and groups	Security big issue Electronic gated parking; additional lighting
Exchange Studios 527 23rd Avenue/OAK	12' - 22' 1st Flr: 12' 2nd Flr: 12 - 22'	No	1st Flr: Ply- wood; 2nd Flr: Poured concrete	Full Kitchens with appliances Full bathrooms	10,000 square foot courtyard with landscaping throughout	50% profes- sionals; 50% artists/profes- sionals	Secured garage parking with electronic gates (one per unit) Electronic intercom system for non-tenant entry
Notes: (1) Information per 1991 Survey. SF= San Francisco; OAK = Oakland. Sources: "San Francisco Live/Work: A Market Survey," a joint project of California Lawyers for the Arts and the San Francisco Arts Commission; Sedway & Associates. D:\28994\WORKR5.WK4							

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TABLE 14
ESTIMATED DEMAND FOR NEW ATTACHED HOUSING UNITS
PRICED FROM \$100,000 TO \$250,000 (a)
SAN FRANCISCO
1996 - 2026

	Phase I 1996 - 2000	Phase II 2001 - 2005	Phase III 2006 - 2010	Phase IV 2011 - 2015	Phase V 2016 - 2020	Phase VI 2021 - 2026
Annual Demand From New Household Growth						
Average Annual Household Growth	1,980	2,000	1,780	1,972	2,029	2,087
x Percent Income-Qualified (b)	40%	40%	40%	40%	40%	40%
x Percent Planning to Purchase a Home (c)	35%	35%	35%	35%	35%	35%
x Percent Planning to Purchase an Attached Home (d)	75%	75%	75%	75%	75%	75%
x Percent Planning to Purchase a New Attached Home (e)	50%	50%	50%	50%	50%	50%
Total Annual Demand From New Household Growth	104	105	94	104	107	110
Demand From Existing Households						
Total Existing Households	318,450	328,400	337,850	347,230	357,232	367,523
x Percent of Households in Turnover (f)	14%	14%	14%	14%	14%	14%
x Percent Income-Qualified (b)	40%	40%	40%	40%	40%	40%
x Percent Planning to Purchase a Home (c)	30%	30%	30%	30%	30%	30%
x Percent Planning to Purchase an Attached Home (d)	50%	50%	50%	50%	50%	50%
x Percent Planning to Purchase a New Attached Home (e)	25%	25%	25%	25%	25%	25%
Total Annual Demand From Existing Households	669	690	710	730	751	772
Total Annual Demand For New Attached Units (g)	773	795	804	834	858	882
Grand Total Five-Year Demand	3,865	3,975	4,020	4,170	4,290	4,410
Hunters Point Shipyard Capture Rate	10.0%	15.0%	15.0%	20.0%	20.0%	20.0%
Total Potential Absorption	387	596	603	834	858	882
Cumulative Absorption	387	983	1,586	2,420	3,278	4,160

Notes:

- Price range determined by current residential comparables in market area (see Table 11).
- Reflects an annual income of approximately \$25,000 to \$62,500.
- Derived from San Francisco's existing and historic home ownership rate.
- Based on historic MLS data and separate data regarding home purchase trends.
- Based on examination of historic MLS data and separate data regarding new condominium sales compiled by S&A.
- Based on sales data calculated by S&A and on industry standards.
- For independent affirmation of this methodology please see historical data trends from the Construction Industry Research Board in Table 16.

Sources: Association of Bay Area Governments (ABAG) "Projections '94"; U.S. Bureau of the Census, "1990 Census of Population and Housing," San Francisco; & Sedway & Associates.

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TABLE 15
PROJECTED HOUSEHOLD POPULATION AND HOUSING UNITS
SOUTH BAYSHORE, SAN FRANCISCO AND BAY AREA
1980-2025

	1980	1990	1995	2000	2005	2010	2015	2020	2025
Household Population									
South Bayshore	20,884	27,667	29,956	31,688	33,408	34,719	36,082	37,499	38,971
San Francisco	654,511	699,330	746,200	766,500	786,800	801,000	815,456	830,173	845,155
Bay Area	5,058,620	5,869,683	6,355,250	6,722,750	7,087,550	7,365,750	7,654,870	7,955,339	8,267,601
Number of Households									
South Bayshore	7,152	8,646	9,083	9,644	10,244	10,276	11,232	12,277	13,419
San Francisco	298,956	305,584	313,500	323,400	333,400	342,300	351,438	360,820	370,452
Bay Area	1,970,551	2,246,242	2,361,010	2,512,270	2,662,170	2,792,030	2,928,225	3,071,064	3,220,870
Persons Per Household									
South Bayshore	2.9	3.2	3.3	3.3	3.3	3.4	3.2	3.1	2.9
San Francisco	2.2	2.3	2.4	2.4	2.4	2.3	2.3	2.3	2.3
Bay Area	2.6	2.6	2.7	2.7	2.7	2.6	2.6	2.6	2.6
Housing Units									
South Bayshore	7,509	9,251	9,620	10,046	10,671	10,704	11,700	12,788	13,978
San Francisco	316,608	328,471	335,294	342,222	347,292	356,563	366,081	375,854	385,888
Bay Area	2,061,343	2,365,323	2,459,385	2,616,948	2,773,094	2,908,365	3,050,234	3,199,025	3,355,073

Sources: City of San Francisco; Association of Bay Area Governments (ABAG); 1993 CACI Marketing Systems; and Sedway & Associates.
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TABLE 16
SAN FRANCISCO RESIDENTIAL BUILDING PERMITS
1970 - 1994

Year	Single Family	Multifamily	Total
1970	144	1,627	1,771
1971	175	3,439	3,614
1972	169	3,270	3,439
1973	286	3,865	4,151
1974	223	1,163	1,386
1975	276	866	1,142
1976	312	1,310	1,622
1977	369	1,167	1,536
1978	227	1,818	2,045
1979	239	1,594	1,833
1980	190	1,012	1,202
1981	83	1,159	1,242
1982	150	1,065	1,215
1983	154	1,058	1,212
1984	409	904	1,313
1985	173	1,217	1,390
1986	139	1,898	2,037
1987	155	2,287	2,442
1988	157	1,774	1,931
1989	147	1,361	1,508
1990	161	916	1,077
1991	195	792	987
1992	70	559	629
1993	82	919	1,001
1994	106	833	939
Total Annual Average:	192	1,515	1,707

Sources: Construction Industry Research Board; and Sedway & Associates.

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TABLE 17
HUNTERS POINT SHIPYARD
CULTURAL USES
TENANT MIX AND ANNUAL PARTICIPATION RATES
1996-2025

Tenant	Total Square Feet	Participants					
		Employees		Student		General Public (1)	
		Total Number	Square Feet Per Person	Total Number	Square Feet Per Person	Total Number	Square Feet Per Person
1. Museum	45,000	52	870	NA	NA	5,000	NA
2. Theater (2)	5,000	6	830	NA	NA	2,500	NA
3. Production and Recording Studio (3) Video Audio and Digital Studio Multimedia	15,600	74	210	NA	NA	3,000	NA
4. Dance Studio (4)	5,000	3	1,667	10	500	1,900	NA
5. Publishing and Printing	15,000	21	360	NA	NA	NA	NA
6. Printmaking (5)	10,000	23	435	300	NA	NA	NA
TOTAL	95,600	179	729 (Average)	310 (Average)	NA (Average)	12,400 (Average)	NA (Average)
							12,889

Notes:

- General public participation rates will increase over time. Rates based on initial years of project development.
- Square footage based on the size of several local and regional theaters surveyed. In addition, general public participation was calculated based on the following set of assumptions: 50 stage performances per year with approximately 50 audience members per performance.
- Square footage based on each component (video, audio, and multimedia) occupying approximately 5,000 square feet. General public attendance for productions and theater presentations is based on an existing audio/video organizations performance schedule which is calculated at 1,500. This number has been doubled to include the general public participation for the various stage and related productions for the other components.
- According to an employee of an existing dance company, the general public attendance (regular performances and community education) is calculated based on the following assumptions: general performances participation averaging 1,000 per year and community education (via local schools) 30 performances per year with 30 students per performance.
- Square footage and participation rates are based on an existing East Bay co-operative printmaking studio. According to one source, approximately 300 students per year participate in printmaking classes offered on-site.

Sources: Representatives of various museums, theaters, production and recording studios, dance studios, and printmaking organizations; and Sedway & Associates.

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TABLE 18
LOCAL THEATER COMPARABLES
SAN FRANCISCO
APRIL 1995

Name Address	Year Opened	Size (Sq. Ft.)	Monthly Lease Rate	Per Sq. Ft.	Program Description	Annual Budget	Revenue/Funding Source	Percent	Comments
Intersection For the Arts 446 Valencia at 16th St.	1990 (1)	1,500 800 2,400 4,500 Total	\$2,000	\$0.44	<ul style="list-style-type: none"> Development of new work-performances Literary Program (including writers, visual artists, and theater artists) 	NA	<ul style="list-style-type: none"> Tickets-Literary Program Readings-\$5/ Theater Performances-\$10 to \$12/ea Theater Rental-Varies Foundation-Varies Local Donors 	NA NA NA NA NA	The theater has recently completed a major renovation program. The theater includes 49 seats and its 2,400 square foot gallery space is unique to local theaters. In the future, Intersection will rely on an increasing percentage of revenue to be generated from the direct rental of the theater. This will allow Intersection to aggressively market their space to local and traveling theater companies and to reduce the risks and costs of developing and producing new work in house. Intersection consists of an in-house grant-making arm that funds the development of new work. Intersection plans to pursue NEA funding and specifically an advancement grant to allow the organization to strategically plan and restructure its program and structure. The theater has no plans to relocate or expand. In addition, the theater has had problems concerning its location in the Mission District including security and image.
Artists' Television Access (ATA) 662 Valencia at 21st St.	1985	500 500 250 250 1,500 Total	NA	NA	<ul style="list-style-type: none"> ATA is a non-profit, artist-managed, media arts center. Provides low-cost access to and training in video technologies (including video classes) Exhibits video and film works 	NA	<ul style="list-style-type: none"> Classes Post Production Facility Hotel Tax Fund Foundation-Varies Local Donors 	5% 80% NA NA NA	ATA was previously located in SOMA; however, space was destroyed in a fire. According to one source, the rent is inexpensive but the theater is currently in a state of disrepair. The space was "built out by artists" and doesn't meet basic needs concerning safety and sanity. ATA doesn't have a member base and all labor is volunteered and provided by artists in exchange for access to the post production facility. ATA recently lost its biggest grant (NEA). In addition, the source mentioned that San Francisco would benefit from additional video studio space that would be operated as a collective with shared equipment and related services.
EXIT Theatre William Penn Court 158 Eddy at Mason St.	1993 (2)	1,857	\$580	\$0.35	EXIT Theatre is a small performing arts organization located in the William Penn Court in the Tenderloin.	\$100,000 (3)	<ul style="list-style-type: none"> Ticket Sales Rentals/Concessions Advertisements Grants for the Arts CA Arts Council Foundation Grants Individual Contributions Corporate Support 	22% 10% 1% 10% 5% 41% 5% 5%	EXIT Theatre was approached by Chinese Community Housing Corp. (CCHC) in 1989 with the idea for the theater. The theater is anchored by cultural uses to be located at the William Penn Court. CCHC received grant funds to assist in the renovation/development of the mini-mall and had designed a tenanted mix to include an antiquarian bookstore, a bookstore/cafe, a display baking school, and related retail. By the time EXIT agreed and signed a Memo of Understanding (MOU) all rehabilitation funds had been obligated for the other tenants and EXIT was required to provide all construction funds to convert the raw space located at the back of the building into a theater (\$157,000), including a \$90,000 loan from the Mayor's Office of Housing. In addition, EXIT Theatre installed all of their own theater equipment that they had accumulated over the last twelve years and two staff members have dedicated several years in developing the organization. EXIT Theatre has developed a plan for their recent grants to the project. The theater filed permits for a change in occupancy from 49 to 128 seats and in 1994 obtained a public assembly permit and food and beverage license.

Notes:
(1) Intersection for the Arts was originally started in North Beach during the 1960's. The theater has been located at 446 Valencia since 1990.
(2) EXIT Theatre was formed approximately 12 year ago.
(3) 1993-94 Budget.

Sources: Staff and interns at various theaters; and Sedway & Associates.
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TABLE 19
ARTIST STUDIO SPACE
SAN FRANCISCO
APRIL 1995

Number of Day Studio Units (1)	284				
Adjustment (10%) (2)	28				
Total Number of Day Studio Units	312				
Day Studio Square Feet	Day Studio			Square Feet (Range)	
	Number per Square Feet Range	Percent of Total			
500 or less	75	24%		37,488	- 37,488
501 - 700	34	11%		17,216	- 24,055
701 - 900	34	11%		24,089	- 30,928
901 - 1,100	75	24%		67,553	- 82,474
1,101 - 1,300	28	9%		30,956	- 36,551
Over 1,300	66	21%		85,285	- 85,285
TOTAL	312	100%		262,588	- 296,780

Notes:

- (1) Day studio space was based on existing studios as documented by the Open Studios program; located in the following neighborhoods: South of Market, Mission District, Potrero, and Bayview/Hunters Point (excluding Hunters Point Shipyard Studios).
- (2) A ten percent upward adjustment factor was included based on the number of artists located in these neighborhoods that do not participate in Open Studios.

Sources: Artspace; Arthouse, "A Live/Work Consumer Survey-1991"; and Sedway & Associates.

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TABLE 20
COMPARABLE STUDIO DEVELOPMENTS
SAN FRANCISCO AND EAST BAY
APRIL 1995
(PAGE 1 OF 3)

Location Project/ Address	Year Originally Built/ Renovated/ Opened	Number of Studios	Occupancy Rate (%)	Building Area (Sq. Ft.)	Number of Stories	Unit Size		Average Rent (Per Sq. Ft.)	Tenant Expenses	Amenities	Comments
						Range	Average				
Potrero Live Art Studio 151 Potrero at 18th St.	NA	16	75%	NA	1-story	150 to 585	200	\$245 \$0.77	Includes all expenses.	GALLERY-400 sq. ft. Some Natural Light Shared Restroom Shared Sink Area Shared Refrigerator Separate Phones	Live Art Studio started as a co-operative in 1980 and still continues to operate as a co-operative (same master lessor and lessee). The studio development is primarily targeted to beginning artists. Several tenants have rented space for at least 2 to 3 years. The larger units (over 500 square feet) are more difficult to rent and a majority of potential tenants have mentioned their inability to pay more than \$200 in monthly rent. The master-lessee leases one-floor of a 3-story building. Related uses are targeted to small businesses and non-profits including Art Alliance. According to management, the artists like showing their work in the shared gallery and specific "showing" terms are included within the sublease agreement. In addition, the fire department doesn't allow walls or partitions to separate the suite areas. Furniture doubles as suite partitions. Management mentioned that artists have not always complied with the clean-up and removal of work related materials.
	NA 1994	21	75%	NA	1-story	140 to 400	NA	NA \$1.00	Includes all expenses.	GALLERY (within studio area) Natural Light Ceilings-14ft. Skylights Shared Restrooms	Two artists (master lessee) started this co-operative studio development in Fall '94. The building is an old industrial building that was previously used as a garment factory. Art Explosion is located on the second floor of a two-story building. Studio space is informally divided. The gallery is geared to sell artists work and includes outside artists work. The development doesn't currently have paid staff and artists must contribute their time to the general upkeep, etc.
South of Market The Clay Studio Harrison at 3rd St.	NA	32	68%	10,000	1-story	150	150	\$150 \$1.00	Includes all expenses.	GALLERY-1,100 sq. ft. Retail Outlet-200 sq. ft. (proposed) Ceramic class area-3,500 sq. ft. Ceiling-17 ft. to 25 ft. Tool Room Chemical Area	The Clay Studio was previously located in the Mission District on Julian St. However, the founder (master lessee) recently relocated to Harrison for several reasons including: cheaper rent, better location, more space. According to the founder, the Mission St. location suffered from poor public image and at the time of the original lease (mid-1980's) the rent increase clause was steep. Approximately 7 classes per week are offered to non-professionals and a series of 8 classes cost \$165 (including materials and studio time). The number of children taking classes has increased in the past several months. The ceramic studios are small cubicle areas with 3-walls, no ceilings, and no individual water hook-ups. The cubicles have access to a five foot aisle area feet. The ceramic studio area totals approximately 4,800 square feet. The founder of the Clay Studio acquired the original equipment when the DeYoung Museum closed its art school program several years ago.
	NA 1995										

continued.

TABLE 20
COMPARABLE STUDIO DEVELOPMENTS
SAN FRANCISCO AND EAST BAY
APRIL 1996
(PAGE 2 OF 3)

Location Project/ Address	Number of Studios	Year Originally Built/ Renovated/ Opened	Occupancy Rate (%)	Building Area (Sq. Ft.)	Number of Stories	Unit Size		Average Rent (Per Sq. Ft.)	Tenant Expenses	Amenities	Comments
						Range (Sq. Ft.)	Average (Sq. Ft.)				
South of Market (cont.)											
SOMA Artist Studios 689 Bryant at 5th St.	14	1945 1980	100%	NA	2-story	250 to 550	NA	NA \$1.00	Includes all expenses.	Gallery (Hallway) Shared Kitchen Shared Bathrooms Ceilings-8 ft.	The SOMA Artist Studios is located at the site of the old EBA School which closed down approximately five years ago. The owner of a local Korean newspaper owns the building and has leased the space to a group of artists who formed a co-operative and established a sublease arrangement. According to one source, the master lessee pays \$0.55 per square foot and charges \$1.00 per square foot to tenants. The owner has seismically upgraded the building. The wide halls serve as the gallery area. The tenants are typically fine artists. Artists are assigned certain tasks concerning upkeep, etc. SOMA Artist Studios currently has a waiting list for studio space.
The Serita Building 1777 Yosemite Ave. at 3rd St.	35	NA NA	100%	133,000	3-stories	600 to 15,500	NA	NA \$0.50	Includes all expenses.	NA	Studio space is located in an old converted Serita mattress factory. According to one source, the building includes one unit at 15,500 square feet. The 3-story building is primarily occupied by crafts (1st floor) and visual artists (2nd and 3rd floors). Zeccho Dance Company, a multicultural dance troupe, is located in approximately 4,200 square feet of space and represents the only performing artists leasing space at the Serita building. Zeccho has built an active arts and education program for students in the Bayview/Hunters Pt. community.
Mission District											
Francisco Studios San Jose Ave. at Geneva	45	NA 1990's	76%	NA	3-stories	700 to 900	700	\$700 to \$900 \$0.88 to \$1.00	Includes all expenses.	Large Windows Running Water Ceilings-20 ft.	According to the owner, Francisco Studios has a high turnover rate (2 to 3 per month). He mentioned that he receives more inquiries for studio units located close to downtown SF. Tenants are primarily fine artists.
East Bay											
Nexus Institute 2707 8th St. Berkeley	NA	1983 NA	NA	30,000	NA	NA	NA	NA	NA	NA	Nexus Institute is a non-profit co-operative community benefit studio development. According to a source, the tenant mix consists of 15 visual artists occupying 20,000 square feet of studio space and a separate woodworking co-operative that occupies 10,000 square feet. No additional information is currently available.
Bayside Court West Oakland	4-Studio 31-LW 35 Total	1928 1985	NA	50,000 (Approx.)	NA	1,300 to 1,400	1,300 to 1,400	\$500-Studio \$750 to \$900-LW Per Square Foot \$35 to \$38-Studio \$58 to \$84-LW	NA	NA	The building is currently being renovated. It was originally built in 1928 and was used as a large commercial laundry. The building has reinforced concrete.

continued.

TABLE 20
COMPARABLE STUDIO DEVELOPMENTS
SAN FRANCISCO AND EAST BAY
APRIL 1995
(PAGE 3 OF 3)

Location Project/ Address	Year Originally Built/ Renovated/ Opened	Number of Studios	Occupancy Rate (%)	Building Area (Sq. Ft.)	Number of Stories	Unit Size		Average Rent (Per Sq. Ft.)	Tenant Expenses	Amenities	Comments
						Range (Sq. Ft.)	Average (Sq. Ft.)				
East Bay (continued..)											
Kala Institute 1060 Heinz Ave. near San Pablo Ave.	NA 1974	See Comments	NA	8,000	NA	Shared Worksho 5,280	NA	Kala-Rent \$3,000 Member Fee \$175-Seniors \$200 to 300- Other Members	Includes all expenses.	Gallery and Administration-2,440 sq. ft. Open 365 days/yr.-24 hrs./day Archives and Dark Room Education and Training Component Shared Equipment/Presses- (6) Etching, (2) Lithographs and (2) Letter Large Storage Area Kitchen area including sink, stove, and microwave Shared restroom area including shower Small private area	The Kala Institute represents a loosely formed non-profit co-operative for printmakers and other artists that work with paper, film, etc. The workshop space is full of shared equipment and storage facilities and is organized for the production of art. Formed in the 1974, the Kala Institute has been located for 15 years in the old Heinz Building. Kala recently executed a new five year lease. Kala represents an urban artist retreat with international attraction which annually allows for nine (six month) fellowship positions-Artist in Residency Program. Fellows are guaranteed to show their work in the gallery. In total, membership ranges between 40 to 45 members per year. While all artists can apply to be general members, the process includes a portfolio review and artists must have the technical knowledge of printmaking. While Kala is structured for approximately 40 members, typically only 15 are actually paying members. The Institute members include: fellows, (6) workshop managers, staff, interns, and paying artists. Members must sign a contract to work in space. Length of contract varies from a few months to several years. Member fees vary per length of contract and the members ability to help with chores, teach classes, etc. In addition to its members, Kala offers 75 classes per year which are open to the public. Approximately 300 students per year participate in this program. Classes are targeted to post graduate level students. Kala is not a money maker and relies on several sources of revenue including the following: (15%) Artist in Residency Program; (15 to 20%) Classes; (15 to 25%) Gallery Sales; (5%) Contract Printing for Artists; (5%) Public Grants; (5%) Supporting Members and Board Members; (NA)-Private Grants. According to one source, earned income typically is greater than 50% of all revenue.

Sources: Various artists, management representatives, and studio development owners; and Sedway & Associates.
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Sources: Various artists, management representatives, and studio development owners; and Sedway & Associates.
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TABLE 21
CO-OPERATIVE ART GALLERIES
SAN FRANCISCO AND ARIZONA
APRIL 1995

City/ Neighborhood Name Address	Year Opened	Size (Sq. Ft.)	Calling Heights	Rent/Mo. Rent/Sq. Ft.	Number of Artists in Co-op	Artist Association Work/Fee Tradeoff	Management of Gallery	Annual Sales Generated	Estimated Visitors per year/ Visitors	Market Area Comments
San Francisco										
Southern Exposure at Project Artaud 401 Alabama at 17th St.	1974	(2) Gallery Rooms 2,400 First Floor 400 Second Floor 2,800 Total	28 feet 18 feet	\$835 \$0.30	NA	NA	3 part-time employees	NA Gallery is not geared to sell art work and doesn't include the sale of art work as a source of revenue.	NA	Southern Exposure was originally formed as co-operative gallery in conjunction with the Project Artaud Live/Work Development. However, in late 1980's, the gallery was converted to a community service gallery targeted to new and emerging innovative artists. Currently, Southern Exposure is a project of Project Artaud Corporation, a non-profit organization and it leases the gallery from Project Artaud. Programs include exhibitions, performance events, artists' talks and forums, and educational and literary projects. Exhibiting artists receive an honorarium that averages \$200. Typically, eight shows per year are presented. Southern Exposure has no plans to expand or relocate to the Shipyard. However, the gallery is interested in the possibility of expanding their Artists in Education program to the Bayview/Hunters Point community.
Collision 417 14th St. at Valencia	1994	600 Gallery 1,200 Studio 1,200 (3) Apartments 3,000 Total	NA	\$330 to \$550 Per Artist	11	In addition to rent structure, each artist is informally assigned tasks regarding marketing, administration, etc.	By Artists	NA Gallery is presently not structured to make substantial sales.	NA	Collision represents a first time effort by the 11 artists to develop and manage a co-operative gallery, studio, and living space environment. Collision is located in an old Victorian house that was previously used by an artist as an art store and gallery. The current artists share three residential units which are located on the second and third floor. A majority of the artists have full-time jobs, three artists are in school, and only one is a full-time artist. The leasing arrangement includes a one year lease for the ground floor gallery/studio space and the residential units are month to month. The gallery charges a nominal fee for shows. To date, almost all of the show and installations have been from outside the core group of 11 artists.
848 Community Space 848 Divisadero at McAllister	1990's	NA	NA	\$1,200 Live-In Artists pay \$800 for rent/ \$800 Gallery	4	Yes	By Artists	NA	NA	848 Community Space is loosely structured as a co-operative. It includes 4 directors/courators: (1) visual director, (2) performance artist directors, and (3) community/music director. The two performance artist directors live at the gallery (in a separate living area). As directors, the four artists act as liaisons to each respective artist community and help market the space for rentals. The gallery/performance area shares the same area for all performances. The space is built out as a theatre with lighting, etc.
Tucson, Arizona										
Dinnerware	1979	1,200 Exhibit Area 800 Administrative 1,800	NA	\$700 \$0.39 Lease with option to purchase	16 Maximum	Yes \$35/Mo. and \$35-Initiation Fee	1-staff (full) 1-staff (part) Interns Director Members	NA Gallery is not structured to make substantial sales. Sales account for less than five percent of revenue.	NA	Dinnerware is located in the downtown Tucson artist district. In 1990, the city developed a city center/artist area plan. The city purchased three adjacent buildings to provide arts-oriented space for galleries and related uses (screening room, and black box theatre). Dinnerware already existed in their downtown location and the other arts organizations relocated into the area. The development and implementation of the artist district has led to other arts organizations relocating downtown. In some instances, artists have purchased buildings within this core area. During the past 15 years, the over 72 artists have been director members. The gallery show both members work in addition to the work of outside emerging artists. Dinnerware currently has an annual budget of \$55,000. Sources of revenue include: public grants (20%), foundations (5 to 10%), member directors (10 to 15%) and individual giving. According to one source, the downtown arts organizations have not extensively collaborated on larger scale performance, etc.

Sources: Gallery representatives; and Sedway Kolin Mouchy Group (SKMG).
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TABLE 22
HUNTERS POINT SHIPYARD
EDUCATION/TRAINING USES
TENANT MIX AND ANNUAL PARTICIPATION RATES
1996-2025

Tenant	Total Square Feet	Employees				Participants				General Public (1)			
		Total		Square Feet		Student		Total		Total		Square Feet	
		Number	Person	Per Person	Person	Number	Person	Number	Person	Number	Person	Per Person	Number
1. Vocational Training School	100,000	25	4,000			1,200	83	NA	NA	NA	NA		1,225
2. Horticulture and Food Training Program (2)	100,000	110	909			850	118		100	1,000			1,960
3. Artist School/Artist in Residency Program (3)	100,000	103	971			620	161		200	500			1,223
4. Public Educational San Francisco Unified School District (4) San Francisco City College	100,000	22	4,545			1,000	100	NA	NA	NA			1,022
5. Community-Based Organization (CBO) (5) Training Collaborative	60,000	10	6,000			150	400	NA	NA	NA			160
TOTAL	460,000	270	3,285 (Average)			3,820	172 (Average)	1,500	NA (Average)				5,590

Notes:

- General public participation rates will increase over time. Rates based on initial years of project development.
- Square footage based on a food training facility consisting of 70,000 square feet and an indoor horticulture/urban garden occupying 30,000 square feet. According to several sources active with urban garden projects, an outdoor garden and composting area ranging from two to five acres could be included in the Horticulture and Food Training Program. General public participation is based on the assumption that the urban garden/composting program will actively sell goods to local residents and restaurants.
- Square footage of Artist School component is based on an existing Bay Area art school with two locations. The two sites located in the East Bay, 150,000 square feet, and San Francisco at 30,000 square feet, currently employ approximately 200 instructors/administrators and have an enrollment of approximately 1,100 students. Square footage of Artist in Residency component is based on existing programs in the United States. Program could include twenty live/work units, ceramic arts facility, and gallery. In addition, based on existing models, the Program could include shared workroom space and amenities (e.g., woodshop, metal shop, small photolab, and an arts library). In addition, it was assumed that general public participation would average 500 per year.
- Total number of participants is based on student enrollment and existing employee ratios for Thurgood Marshall Academic High School located in the Bayview neighborhood. According to a source, the school currently has 310 students (ninth-grade only) and full occupancy will be achieved in 1998 with 1,000 students (ninth- through twelfth- grade). Employee participation rate may vary.
- Square footage based on the average size of several education and training facilities surveyed. Student (client) participant ratio may vary.

Sources: Representatives of vocational schools, horticulture and food training programs, artist schools, artist in residency programs, San Francisco Unified School, and community-based organizations; and Sedway & Associates.

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TABLE 23
NONPROFIT EDUCATION AND TRAINING ORGANIZATIONS
SAN FRANCISCO
APRIL 1996
(PAGE 1 OF 2)

Organization Address	Size of Facility (Sq. Ft.)	Monthly Rent	Program (s) Description	Length of Program (s)	Number of Clients Served	Percent Bayview/Hunters Pt. Residents Served	Comments
Bay Area Urban League 637 Divisadero at Hayes	NA	NA	Assists in the development of on-the-job training opportunities in administrative, clerical, and service occupations. Related programs include: -Job Training Partnership Act Projects -Annual Job Fairs -Employment Counseling -North Cities Coalition -HIV/AIDS Education/Prevention	Ranges from 1 to 3 months.	44 per each cycle	NA	The organization is the Bay Area representative of the national Urban League organization. Future Urban League plans include the expansion of the alternative school program (i.e., the Oakland/Emiliano Zapata Street Academy). The alternative school program annually enrolls 150 students ranging in age from 14-19. The alternative school is administered by the Urban League through a contractual agreement with the Oakland Unified School District. In addition, the Urban League is interested in developing a vocational training center in conjunction with the alternative school program. As tentatively proposed, the two programs would require approximately 20,000 to 30,000 square feet. The Urban League is interested in providing services to the development and expansion of education and training programs in Bayview/Hunters Pt. As such, the Urban League would like to collaborate with CBO's in the Bayview/Hunters Pt. community and assist in the development and strategic planning of future programs.
The Family School (TFS) 548 Fillmore at Oak	NA Nursery Area Preschool Classroom Classroom Area Administration Area	NA	Competency-based skills instruction designed to improve the basic skills of participants, combined with computer literacy training. Services and additional programs include the following: -GAIN Program -Foster Care Program -Childcare Services -Next Step Program -Tutoring and Mentoring Programs	Over a 12 month period.	51 (from 794 through 3/95)	85% African American 15% Latina 75% SOMA (1) 25% NOMA (2)	TFS represents a unique program and a working model for welfare reform. The Greater Access to Independence (GAIN) program is one of few programs targeted to AFDC moms. In addition, TFS provides childcare on-site for the GAIN program clients. The vast majority of moms have little or no work history and participants range in age from 18 to 49. A majority of the GAIN participants enroll their children in the infant and preschool centers. The average age of participants is 27 years old. TFS was incorporated in 1996 as a community-based non-profit agency providing comprehensive education services to women wanting to transition off welfare and into the labor market. Originally, all GAIN participants were from the Hayes Valley Housing Projects. TFS has an annual budget of \$500,000. In addition to the GAIN program, a Foster Care Program, which takes place at night, provides living skills education and personal empowerment classes to youth in San Francisco. Approximately 200 (out of 300 total) foster care kids participate in this program. According to one source, the number of foster kids currently participating in a TFS/San Francisco Educational Services collaborative program is 92. Almost 60% of these participants are from Bayview/Hunters Pt. TFS is currently researching the feasibility of expanding their operation and is interested in the possibility of spearheading the development of education/training/childcare services and related programs at the Shipyard. TFS would like to work directly with Bayview/Hunters Pt. CBO's in the development and implementation of a facility to be located at the Shipyard.
Asian Neighborhood Design (AND) Connecticut St. at 28th St.	17,000	NA-Own	Classroom training for construction and cabinet-making occupations.	Over a 15 week period.	100 to 120 (1) Just received additional funds to expand program	15%	AND represents a nationally recognized model concerning education and job training. The program will expand to Oakland later this year to reestablish its roots in the East Bay. AND recently acquired and is currently renovating a 55,000 square foot building with occupancy scheduled for Fall/Winter 95. In addition the program will "franchise" its model for the development of a cabinetry and construction program in Boston. AND was previously based in Bayview at Yosemite and 3rd St. However, AND acquired a site and built its current Potrero facility to allow it to provide more citywide services. In addition, AND occupies space on Bush St. This location represents the business and development arm of AND and includes housing development, architectural services, and family and youth counseling services. AND will be expanding its cabinetry and construction program to include Computer Aided Design (CAD) and regular drafting training. This is intended to allow the education and training program to parallel the services provided by the business and development facility.

continued...

TABLE 23
NONPROFIT EDUCATION AND TRAINING ORGANIZATIONS
SAN FRANCISCO
APRIL 1995
(PAGE 2 OF 2)

Organization Address	Size of Facility (Sq. Ft.)	Monthly Rent	Program(s) Description	Length of Program (s)	Number of Clients Served	Percent Bayview/Hunters Pt. Residents Served	Comments
Goodwill Industries Mission St. at 11th St.	106,000 30,000 136,000	NA- Own	Referral and on-the-job training in service industry, computer applications, and retail services. Also provide: -English as a Second Language -Continuing Career Education Homeless and Title III are eligible applicants.	Ranges from 1 to 9 months.	70/daily	NA-With relocation back to SOMA it is expected that fewer Bayview/Hunters Pt. residents will be served.	Since the 1989 earthquake, Goodwill Industries has been leasing temporary space on Army St. The earthquake damaged their original Howard St. facility which Goodwill Industries owned. Approximately \$9.7 million of the total cost of \$14 million is from FEMA funds which was used to acquire and renovate the new space (previously the Coca-Cola bottling plant) on Mission St. The temporary Army St. lease consisted of 46,000 square feet with \$24,000 in monthly rental payments (or \$0.52 per square foot/month). The new site will include a separate two-story, 30,000 square foot building which will house the offices and a new thrift store next to the 106,000 square foot renovated headquarters. Goodwill Industries currently leases approximately 12,000 square feet of space at the Bayview Plaza. The space, which has approximately five years remaining, is currently underutilized and Goodwill is considering realtering the floor plan to allow for community meeting space/classrooms in addition to the retail component. Goodwill has no plans to expand or relocate to the Shipyard. According to one source, Goodwill would be interested in assisting in the development of a education and training program (specifically if it involved arts) at Hunters Pt. With its new space on Mission St., Goodwill will be able to triple the number of daily participants in their programs including: retail/merchandising training, English as a Second Language (ESL), computer courses and career education. Goodwill Industries is set up as a junior/community college and is a credited secondary school.
Arriba Juntos 2017 Mission St. at 16th St.	10,000	\$7,000 \$0.70	Nursing and home health, computer skills, on-the-job training programs, eligible applicants. Also provide: -Health programs for immigrant women, English as a Second Language, after-school programs, and youth at work. Arriba Juntos is currently developing a program concerning toxic and household hazardous waste removal.	Typically 10 weeks of education followed by occupational training.	600 per year in the education and training programs and 2,200 to 2,600 per year including all services.	16% Percent includes residents from Bayview/Hunters Pt. and Western Addition.	In addition to programs offered, Arriba Juntos works directly with Department of Social Service and their GAIN program. Arriba Juntos has seen the demand for their services increase dramatically and in the last six months have served approximately 500 people in the education and training program. In addition to the education and training facility, Arriba Juntos occupies a building on 24th St. at York for a Mental Health Center. Arriba Juntos is currently looking for a larger facility in the Mission District (15,000 to 20,000 square feet) and presently has no plans to expand to Bayview/Hunters Pt. However, according to one source, Arriba Juntos is interested in assisting in the development of a education and training program at the Shipyard.

Notes:

(1) South of Market includes the following neighborhoods: South of Market, Potrero, Mission District, Visitacion Valley, Bayview/Hunters Pt., and Excelsior.

(2) North of Market includes the following neighborhoods: Tenderloin, North Beach, and Hayes Valley.

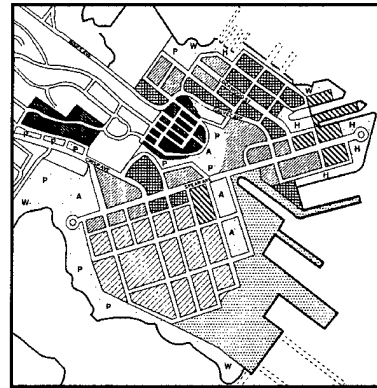
Sources: Various contacts at education and training facilities; and Sedway & Associates.

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Appendix C

Current BRAC Leases



APPENDIX C: CURRENT BRAC LEASES

**APPENDIX C
CURRENT LEASES**

Parcel (Sub-Parcel)	Building Number	Current Use^a	Current Tenant^b
A (N-17)	101	Art activities and office space	Agency (subleased to J. Terzian)
A (N-17)	110	Art activities	Agency (subleased to J. Terzian)
A (H-51)	158	Sentry house – main gate	EFA West
A (H-51)	322	Security guard and pass office	EFA West
A (S-46)	808	Copier paper and toner cartridge distribution center	Precision Transport
A (S-47)	813	Offices and warehouse space	Navy (will be moving)
A (H-51)	915	Offices	Agency
A (N-3)	916	Restaurant	Dago Mary's Restaurant
B (N-4)	103	Art activities	Agency (subleased to J. Terzian)
B (N-4)	104	Art activities	Agency (subleased to J. Terzian)
B (N-7)	114 (113A)	Offices and workshop	Smith-Emery Co.
B (N-5)	115	Woodworking shop and work studios	Finish Works
B (N-5)	116	Picture framing	Frameworks and Various Artisans
B (N-4)	117	Art activities	Agency (subleased to J. Terzian)
B (N-7)	120	Athletic facility	Police Athletic Club
B (N-9)	125	Cabinet making, workshop, offices, and storage	Bridenthal Cabinetry
B (N-9)	128	Storage	CCSF DEA

**APPENDIX C
CURRENT LEASES (CONTINUED)**

Parcel (Sub-Parcel)	Building Number	Current Use^a	Current Tenant^b
C (N-11)	134	Refrigeration and air conditioning	Odaco, Inc.
C (N-23)	203	Power plant	Astoria Metals has access to the building for electrical reasons
C (N-23)	215	Firehouse	EFA West
C (N-OS)	229	Electrical Substation	CINC PAC FLEET, Navy
C (N-26)	230	Wheel manufacturing	Ermico Enterprises
C (N-24)	270	Equipment storage and office space	YK (CINC PAC FLEET, Navy)
C (N-24)	271	Equipment storage and barge services office	YK (CINC PAC FLEET, Navy)
C (N-24)	272	Offices, workshop, and storage	Carpenter Rigging and Ermico Enterprises
C (N-23)	275	Aluminum casting shop	Ermico Enterprises
C (S-27)	300	Electrical Substation	Astoria Metals has access to the building for electrical reasons
C (S-27)	301	Men's showers and locker rooms	Astoria Metals
C (S-27)	367	Field office	Astoria Metals
C (S-27)	Drydock 4 and south pier	Ship dismantling	Astoria Metals
D (S-28)	302	Locomotive Restoration Area	Golden Gate Railroad Museum
D (S-27)	306	Electrical Substation	Astoria Metals
D (S-43)	307	Equipment Storage	Agency (subleased to Wedrell, Wilson, and Sons)

**APPENDIX C
CURRENT LEASES (CONTINUED)**

Parcel (Sub-Parcel)	Building Number	Current Use^a	Current Tenant^b
D (S-27)	308	Saltwater Pumphouse	Astoria Metals does not use the building
D (S-27)	311	Unknown	Astoria Metals
D (S-39)	323	Art activities	Agency (subleased to J. Terzian)
D (S-28)	363	Workshop	Quality Craftsman
D (S-39)	364	Laboratory for metals analysis	Young Laboratories
D (S-28)	366	Workshop and art activities	Christian Engineering/ Agency (J. Terzian)
D (S-27)	372	Storage	Astoria Metals
D (S-27)	381	Offices and Workshop	Agency (subleased to Wedrell, Wilson, and Sons)
D (S-27)	383	Office space	EFA West (Caretaker Staff Office)
D (S-30)	401	Art activities, workshop, and storage	Di Paolo and Barbar/J. Heagy/ P. Powers/West Edge Design
D (S-30)	404	Workshop and manufacturing sheetmetal products	Mina Metal Corporation
D (S-37)	407	Moving and storage	American Van Lines
D (S-38)	411	Workshop, storage, and offices	Sierra Western Equipment/Eric Lansdown/Christian Engineering
D (S-29)	417	Storage	Hydro-Chem
D (S-29)	418	Offices and workshop	Hydro-Chem
D (S-29)	424	Storage, laundry, and showers	Hydro-Chem
D (S-30)	435	Storage and art activities	J. Terzian/West Edge Design

**APPENDIX C
CURRENT LEASES (CONTINUED)**

Parcel (Sub-Parcel)	Building Number	Current Use ^a	Current Tenant ^b
D (S-41)	606	Police staging area, offices, and vehicle storage	Agency (subleased to SFPD)
E (S-35)	371	Storage and scrap metal storage	S&W Productions
E (S-31)	405	Equipment	Clean Comp
E (S-36)	406	Automobile repair	B&A Bodywork/Towing
E (S-36)	413	Moving and storage	American Van Lines
E (S-35)	704	Maintenance workshop	Wagner Construction
E (S-45)	809	Locomotive storage and restoration area	Golden Gate Railroad Museum
E (S-OS)	Off Base	Railroad Right-of-Way	Golden Gate Railroad Museum

Source: U.S. Navy, 1998e.

Notes:

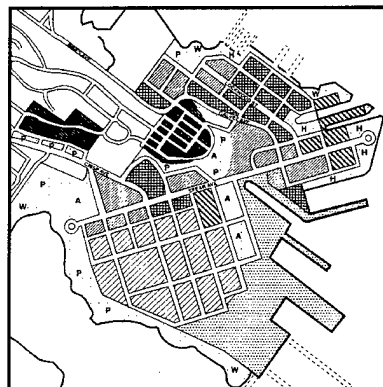
Agency	San Francisco Redevelopment Agency
Astoria Metals	Astoria Metals Corporation
CCSF	City and County of San Francisco
DOT	U.S. Department of Transportation
DEA	U.S. Drug Enforcement Agency
EFA West	Engineering Field Activity West
ft ²	Square foot
HPS	Hunters Point Shipyard
Hydro-Chem	Hydro-Chemical Services, Inc.
Navy	U.S. Department of the Navy
NRDL	Naval Radiological Defense Laboratory
SFPD	San Francisco Police Department

^a Only buildings currently used are listed. Buildings not listed are either not being used or have been demolished.

^b Building is being leased by listed tenant or used in some capacity by listed tenant.

Appendix D

Hunters Point Shipyard Redevelopment Plan and Design for Development



APPENDIX D: REDEVELOPMENT PLAN AND DESIGN FOR DEVELOPMENT
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HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN	21 pp
DESIGN FOR DEVELOPMENT	56 pp

HUNTERS POINT SHIPYARD REDEVELOPMENT PLAN

JULY 14, 1997



SAN FRANCISCO REDEVELOPMENT AGENCY

REDEVELOPMENT PLAN
for the
HUNTERS POINT SHIPYARD PROJECT AREA

HUNTERS POINT SHIPYARD REDEVELOPMENT PROJECT

REDEVELOPMENT PLAN

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Hunters Point Shipyard Redevelopment Project

REDEVELOPMENT PLAN

The Redevelopment Plan (the "Plan") for the Hunters Point Shipyard Redevelopment Project (the "Project") consists of the following text and maps. The maps are: Boundary Map (page 1); Map 1 Land Use Plan; Map 2 Existing Buildings; and, Map 3. Street Plan.

The Plan was prepared in accordance with the California Community Redevelopment Law and pursuant to Chapter 4.5 therein, which governs the redevelopment of closed military bases. During the preparation of this Plan, the Redevelopment Agency of the City and County of San Francisco (the "Agency") consulted with the Mayor's Hunters Point Shipyard Citizens Advisory Committee, the City Planning Commission, and with other departments and offices of the City and County of San Francisco (the "City"). The Plan will conform to the General Plan of the City insofar as said General Plan applies to the Project. Any development within the jurisdiction of the Bay Conservation and Development Commission shall conform to the San Francisco Bay Plan.

I. DESCRIPTION OF PROJECT

A. Project Boundaries

The boundaries of the Project Area, indicated on the Boundary Map on the next page, are described as follows:

The area consists of real property within the City and County of San Francisco, State of California, more particularly described as follows:

P A R C E L O N E

Beginning at the point of intersection of the southeasterly line of Fitch Street and the northeasterly line of Palou Avenue as said streets are shown upon the "Map of the property of the South San Francisco Homestead and Railroad Association", filed April 15, 1867, in Book 2, "A" and "B" of Maps, Page 39, in the County Recorder's Office of the City and County of San Francisco, said point having California Coordinate values: N.452,070.23 E.1,457,299.61 (Zone III); and running thence from said Point of Beginning easterly, northerly and westerly along the following series of courses and distances:

- | | | |
|-----|---------------|--|
| # 1 | S.66°24'34"E. | 774.37 feet; |
| # 2 | S.74°08'24"E. | 68.77 feet; |
| # 3 | N.25°47'36"E. | 177.17 feet; |
| # 4 | N.65°00'41"W. | 377.67 feet; |
| # 5 | N.51°35'29"W. | 202.50 feet; |
| # 6 | N.65°31'39"W. | 227.49 feet; |
| # 7 | N.67°43'50"W. | 60.90 feet; |
| # 8 | N.69°21'07"W. | 156.62 feet; |
| # 9 | N.74°41'13"W. | 78.46 feet; |
| #10 | N.79°19'57"W. | 383.85 feet to the above referenced
northeasterly line of Palou Avenue; thence along
said northeasterly line |
| #11 | N.53°17'47"W. | 25.88 feet to the southeasterly line of
Griffith Street; thence along said southeasterly |

- line
- #12 N.36°42'13"E. 200.00 feet to the southwesterly line of Oakdale Avenue; thence along said southwesterly line
- #13 N.53°17'47"W. 32.00 feet to the centerline of Griffith Street; thence along said centerline
- #14 N.36°42'13"E. 600.00 feet to the centerline of McKinnon Avenue; thence along said centerline
- #15 S.53°17'47"E. 664.00 feet to the centerline of Fitch Street; thence along said centerline
- #16 N.36°42'13"E. 319.20 feet to the northeasterly line of LaSalle Avenue; thence along said northeasterly line
- #17 S.53°17'47"E. 632.06 feet to a point in the northwesterly line of Earl Street; thence southwesterly 69.24 feet along the arc of a curve to the right whose radial bearing is N.53°17'47"W. having a radius of 105.00 feet, through a central angle of 37°47'02"; thence southeasterly along the radial bearing produced
- #18 50.00 feet to a point on a curve to the right having a radial bearing S.15°30'45"E. and having a radius of 20.00 feet, through a central angle of 48°28'07" and an arc distance of 16.92 feet, said point also being located on the centerline of Earl Street, thence along said centerline
- #19 S.15°30'45"E. 398.94 feet; thence southerly, easterly and northerly the following series of courses and distances:
- #20
- #21 S.36°42'13"W. 22.16 feet;
- #22 N.64°12'01"W. 158.00 feet;
- #23 S.24°37'25"W. 727.00 feet;
- #24 S.64°12'01"E. 174.85 feet;
- #25 N.25°47'59"E. 890.12 feet;
- #26 N.36°42'13"E. 48.00 feet;
- #27 N.53°17'47"W. 206.90 feet to the southwesterly line of Innes Avenue, thence along said southwesterly line
- #28 N.36°42'13"E. 640.93 feet to the centerline of Earl Street; thence along said centerline
- #29 N.53°17'47"W. 40.00 feet to the centerline of Innes Avenue; thence along said centerline
- #30 N.36°42'13"E. 32.00 feet to the southeasterly line of Earl Street; thence along said southeasterly line
- #31 S.53°17'47"E. 3,151.02 feet to the 1948 Bulkhead Line as shown on the map entitled "Real Estate Summary Map Navfac Drwg No. 1045757" on file at the Department of the Navy, WestDiv, San Bruno, California; thence southeasterly along said 1948 Bulkhead Line
- #32 N.36°42'13"E. 2,553.02 feet; thence leaving said Bulkhead line
- #33 S.35°56'38"E. 50.69 feet to the most northerly point on the parcel of land described in the deed recorded in Volume 3677, Official Records of the City and County of San Francisco, at Page 349, thence southwesterly and southeasterly around said parcel of land
- #34 S.30°50'40"W. 1,179.13 feet;
- #35 S.36°42'09"W. 1,826.56 feet to the aforementioned 1948
- #36 S.53°17'47"E.

- Bulkhead Line; thence southwesterly along said 1948 Bulkhead Line
- #37 S.12°07'46"W. 6,384.03 feet to a point on the County line dividing the County of San Mateo and the County of San Francisco; thence northwesterly along said County line
- #38 N.88°54'38"W. 127.35 feet to the northeasterly line of Bancroft Avenue extended; thence along said northeasterly line extended
- #39 N.53°17'47"W. 7,483.89 feet to the southeasterly line of Fitch Street; thence along said southeasterly line
- #40 N.36°42'13"E, 2,800.00 feet to the Point of Beginning of this description.

Containing 893.3 acres of land more or less.

P A R C E L T W O

(The original 48-acre more or less shipyard in the northeast corner of the Naval Base)

Beginning at a point on the northeasterly line of Evans Avenue extended, distant thereon 450 feet southeasterly from the southeasterly line of Boalt Street extended, as said streets are shown on the "map of the property of the South San Francisco Homestead and Railroad Association", filed April 15, 1867, in Book 2, "A" and "B" of maps, page 39, in the County Recorder's Office of the City and County of San Francisco; and running thence northeasterly on a line drawn parallel with said southeasterly line of Boalt Street

- #35 N.36°42'09"E. 1,179.13 feet to a point on a curve to the right with a radius of 1,800 feet, whose center is a point on the northeasterly line of Galvez Avenue, distant thereon 250 feet southeasterly from the southeasterly line of Alvord Street extended, and the radial bearing to said centerpoint being S.21°45'52"W"; thence southeasterly, southerly, and southwesterly along said curve to the right with a radius of 1,800 feet through a central angle of 86°48'43", a distance of 2,727.28 feet to a point on the northeasterly line of Evans Avenue extended, said point having a radial bearing S.71°25'25"E. to the centerpoint of said curve; thence northwesterly along said line of Evans Avenue and the extension thereof the following two courses:
- #91 348.11 feet;
- #90 N.53°17'47"W. 1,826.56 feet to the Point of Beginning
- #36 N.53 ° 17'47"W.

Containing 48.6 acres of land more or less.

P A R C E L T H R E E

(The strip of underwater land lying between the Pierhead and Bulkhead lines)

Beginning at the point of intersection of the direct extension northeasterly of the southeasterly line of Earl Street as shown on the map referenced in Parcel

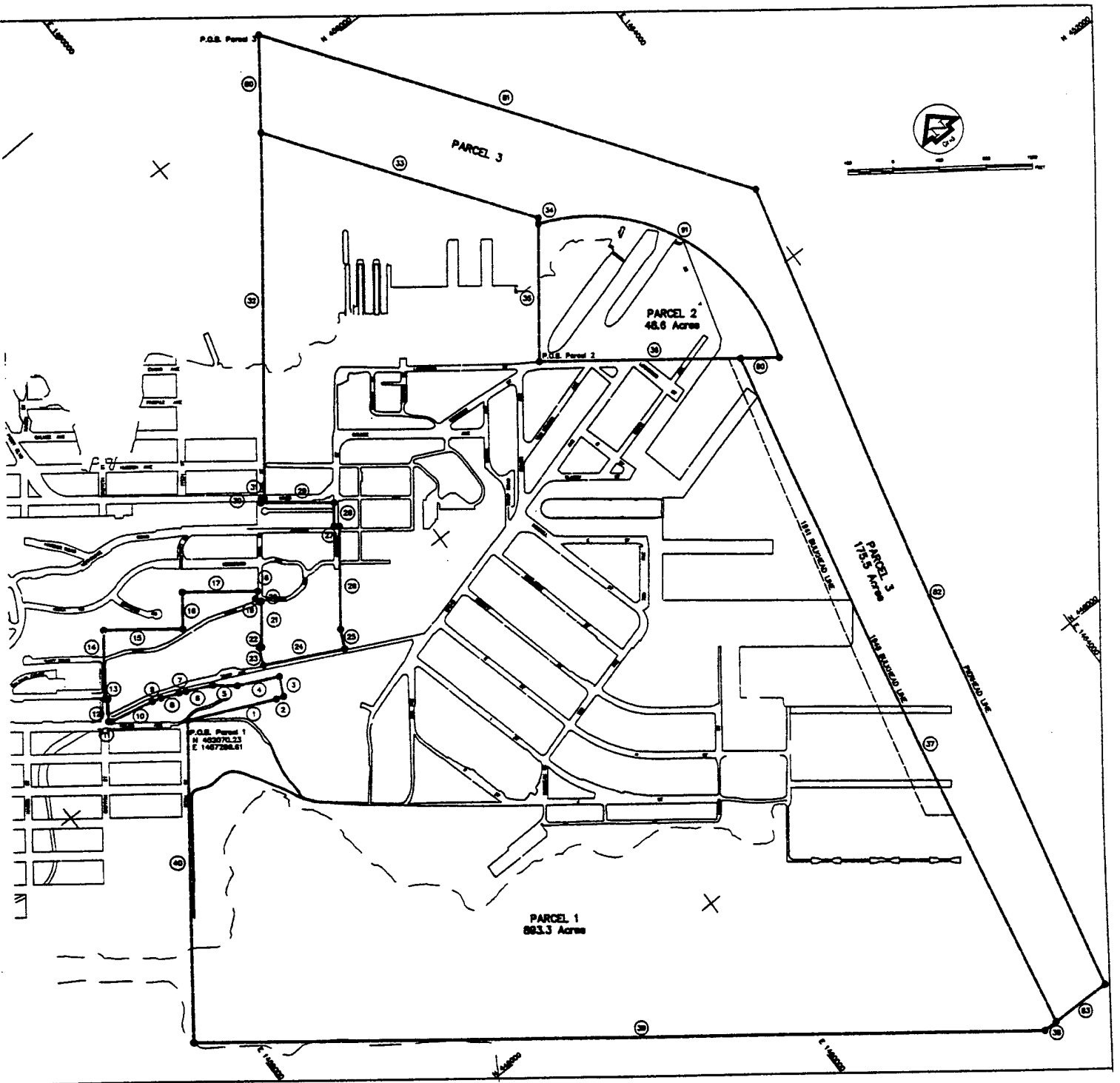
Two above, with the United States Pierhead Line as shown on the map entitled "Hunters Point Naval Shipyard, General Development Map. Key Map No. 1174922" on file at the Department of the Navy, Western Division, in San Bruno, California; thence southeasterly and southwesterly along said Pierhead Line the following courses and distances:

#81	S.35°56'38"E.	4,619.53 feet more or less;
#82	S.13°41'06"W.	7,542.33 feet more or less to the point of intersection with the line dividing the City and County of San Francisco and San Mateo County, thence northwesterly along said boundary line
#83	N.88°54'38"W.	543.06 feet more or less to the easterly line of Parcel One above described; thence northeasterly, easterly and northwesterly along the easterly and northeasterly lines of Parcels One and Two above described to the southeasterly line of Earl Street extended, thence northeasterly along the direct extension of the southeasterly line of Earl Street
#80	N.36°42'13"E.	838.14 feet more or less to the Point of Beginning.

Containing 175.5 acres of land more or less.

NOTES:

1. #'s indicate course numbers as referenced on the Hunters Point Shipyard Redevelopment Project Area Boundary Map.
2. Bearings shown above are referenced to the California Coordinate System Zone III.



PROJECT AREA
B O U N D A R Y M A P
HUNTERS POINT SHIPYARD REDEVELOPMENT PROJECT
SAN FRANCISCO REDEVELOPMENT AGENCY
March 1997

B. The Citizens Advisory Committee Planning Guidelines /
A Statement of General Principles

The planning process for the reuse of the Hunters Point Shipyard Project Area is complex, involving the Mayor's Hunters Point Shipyard Citizens Advisory Committee (the "CAC"), a host of citizen groups and government agencies. The planning process establishes the roles of these various entities, as well as the timeframe during which certain actions must occur. The process began in earnest in 1993 when the CAC convened to formulate goals and preferred uses for the Shipyard site. The CAC adopted a set of planning guidelines to frame their ideas for the development and reintegration of the Shipyard into the social, economic and physical fabric of Bayview Hunters Point and the City of San Francisco at an intensive conference and public workshop which they sponsored in February 1994. The CAC guidelines represent a strong group consensus and the Committee feels that they should set the tone for the renewal of the project area. These planning guidelines are outlined below:

1. Create Jobs for Economic Vitality

Encourage land uses that will foster employment, business and entrepreneurial opportunities, cultural and other public benefits for residents of San Francisco. South Bayshore residents and businesses should be given priority. Legislative and administrative regulation mandating preference to South Bayshore residents and businesses in the course of the environmental remediation, redevelopment and reuse of the property should be used to facilitate this objective. Existing training and educational programs shall be supported and new programs created as needed.

2. Support Existing Businesses and Artists' Community

New uses should be compatible with existing South Bayshore businesses, Shipyard businesses and artists, and other sectors of San Francisco's economy. Maintain the large community of artists and artisans on the Shipyard, providing for their need for flexible low-cost space, while accommodating the full diversity of arts and culture in the South Bayshore community. Expand the scope of activities to accommodate the full range of arts and culture.

3. Create Appropriate Mix of New Businesses

Encourage diversity with a mix of large, medium and small businesses to generate revenues for the City's general fund and stimulate the economy of the South Bayshore community. Diversify San Francisco's economic base by restoring its industrial sector with uses based on futuristic technologies tied to regional, national and international markets and economies. Target industries and businesses with a likelihood for long-term growth such as multimedia, biotech and video-film.

4. Balance Development and Environmental Conservation

Balance development with reclamation of the natural ecology of the southeast waterfront with targeted uses that are environmentally appropriate for the San Francisco Bay. Use the toxic cleanup process to develop training, employment and business opportunities consistent with Guideline #1.

5. Facilitate Appropriate Immediate Access

Incorporate an action program to enable immediate access to existing Shipyard facilities, giving preference to South Bayshore businesses and organizations. Transitional uses in the Shipyard should be consistent with, and not deter, long-term development of the Shipyard in accordance with these Master Plan Guidelines.

6. Integrate Land Uses

Integrate new uses at the Shipyard into current plans for the Bayview area. Plan for the integration of passive and active open space, affordable housing, transportation and traffic circulation, while minimizing land use conflicts between housing and industry.

7. Acknowledge History

Include uses that acknowledge the history of the original Native American inhabitants of the Hunters Point area and historic relationship of Bayview Hunters Point's African-American community to the Shipyard.

C. Existing Conditions

The Project Area is characterized by conditions of blight. Physical conditions include buildings in which it is unsafe or unhealthy for persons to live or work, and the existence of factors that prevent or substantially hinder the economically viable reuse of buildings and areas. Economic conditions include depreciated or stagnant property values, including properties containing hazardous wastes, and abnormally high business vacancies, abandoned buildings, and excessive vacant lots within an area formerly used as a military base.

D. Summary of Proposed Actions

The Agency in accordance with and pursuant to applicable Federal, State and local laws will remedy, or cause to be remedied, the conditions causing blight presently existing in the Project Area by some or all of the following measures:

1. Rehabilitation, alteration, modernization, general improvement or any combination thereof (hereinafter called "rehabilitation") of certain existing structures.
2. Acquisition of real property by purchase, gift, devise, exchange, condemnation, lease, or any other lawful means.
3. Relocation of certain commercial and industrial occupants presently located in structures which may be subject to acquisition or rehabilitation.
4. Demolition, removal, or clearance of certain existing buildings structures, and improvements.
5. Installation, construction, or reconstruction of streets, utilities, and other public improvements or facilities.
6. Disposition of all land acquired by the Agency for reuse in accordance with the Plan and such additional conditions as may be established by the Agency in any manner

authorized by law in order to carry out the purposes of redevelopment.

7. Formulation and administration of rules governing reasonable preference to owners or tenants of business, or other types of real property who are displaced from the Project to reenter the Project Area.

II. PROJECT PLAN

A. Objectives

The objectives of the actions proposed by the Plan are to:

1. Foster employment, business, and entrepreneurial opportunities in the rehabilitation, construction, operations, and maintenance of facilities in the Project Area.
2. Stimulate and attract private investments, thereby improving the City's economic health, tax base, and employment opportunities.
3. Provide for the development of economically vibrant and environmentally sound districts for mixed use; cultural, educational and arts activities; research, industrial and training activities; and hilltop housing.
4. Provide for the development of mixed-income housing:

With regard to this objective, the project-wide aggregate income-mix goal includes 15% of the housing for persons and families of low or moderate income.

The term "persons and families of low or moderate income" has the same meaning as defined in Section 50093 of the California Health and Safety Code.

5. Retain, improve, and re-use historic structures as part of a program to feature the history of people, buildings, and uses at the Shipyard.
6. Provide for infrastructure improvements, including: streets and transportation facilities; open space and recreation areas; and utilities for water, sewer, gas, and electricity.
7. Remove conditions of blight in the form of buildings, site improvements, and infrastructure systems which are substandard and serve as impediments to land development.
8. Encourage use of the most cost-effective, energy-efficient measures feasible.
9. Retain those existing viable industries and businesses currently located in the Project Area.

B. Land Use Plan

The Project Area shall be redeveloped in accordance with the text and maps of this Plan. The use of land and buildings shall be in accordance with this Plan and with the standards and guidelines which may be set from time to time and set forth by the Agency.

The maximum basic height of buildings shall range between 32 and 60 feet. Building types shall be those permitted by the San Francisco Building Code. The total number of buildings within the Project Area shall not exceed 500. The number of land parcels will determine the size of the buildings in the Project Area.

The specific use of the buildings will be controlled by the Land Use Plan and the Land Use Map.

If fully developed under this Plan, the residential areas will contain approximately 800 to 1,300 dwelling units. Public rights-of-way and land use boundaries shall be generally as indicated on Map 1, Land Use Plan, and are subject to adjustment by the Agency at the time of detailed engineering studies.

The location of planned land uses are identified on Map 1. The categories of land use include the following:

1. Industrial

Uses permitted shall be limited to light industrial development and may include the following and similar uses:

manufacturing, processing, fabricating, and assembly of:

- * medicinal and botanical products
- * biological products
- * food products
- * chemicals and allied products
- * primary and fabricated metal products
- * electrical/electronic equipment and parts

trucking and courier services
 wholesale sales
 equipment leasing
 airport-related ground transportation services
 auto-related services
 motion picture production
 printing and publishing
 warehousing and distribution
 artist and artisan studios

2. Research and Development

Uses permitted shall be limited to research and development firms and to light industrial development and may include the following and similar uses:

manufacturing, processing, fabricating, and assembly of:

- * surgical and medical appliances and supplies
- * ophthalmic goods
- * X-ray apparatus and tubes
- * diagnostic substances
- * electromedical equipment
- * precision instruments

data processing
 telecommunication services
 artist and artisan studios
 live/work spaces

3. Mixed Use

Uses permitted shall be limited to a mix of the following and similar uses:

- artist studios
- live/work spaces
- residential
- galleries
- recording studios
- research and development firms
- education and health services
- warehousing and distribution
- business and arts services
- real estate and insurance offices
- hotel and conference facilities
- local-serving retail sales

4. Cultural and Educational

Uses permitted shall be limited to the following cultural and educational, and similar uses:

- education and training facilities
- museums
- theaters
- specialty retail sales
- restaurants
- galleries
- conference facilities
- artist studios

5. Residential

Uses permitted shall be limited to the following:

- mixed-income housing ranging from single-family to multi-family residential developments
- neighborhood commercial, to be concentrated at the street corners along Innes Avenue

6. Open Space

Uses permitted shall be limited to the following:

- active recreation
- passive recreation
- plazas and promenades
- wetlands restoration
- ancillary commercial uses

7. Maritime Industrial

Uses permitted shall be limited to maritime industrial development and may include the following and similar uses:

- shipping terminals and berths
- cargo warehouses
- equipment warehouses
- repair facilities
- drydocks
- ship repair
- berthing facilities
- workshop areas
- maritime training facilities

Notwithstanding the above listings, development may occur on the three blocks shown as Future Development Map 1 only after a finding is adopted by the Planning Commission and the Redevelopment Agency Commission that such development will not detract from the economic and physical viability of the Lockwood Landing sub-area.

C. Standards for Development

The Project Area shall be redeveloped in accordance with the text and maps of this Plan and with other standards and guidelines which are consistent with this Plan and which the Agency is hereby authorized to establish from time to time.

D. Retention-Rehabilitation

Existing buildings in the Project Area are identified by building number, on Map 2.

1. Historic buildings and facilities proposed for retention, rehabilitation and adaptive reuse include:

Buildings 140, 204, 205, 207, and 253; and

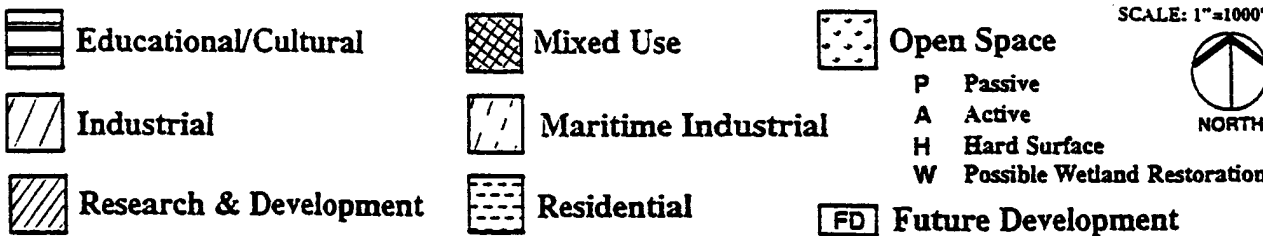
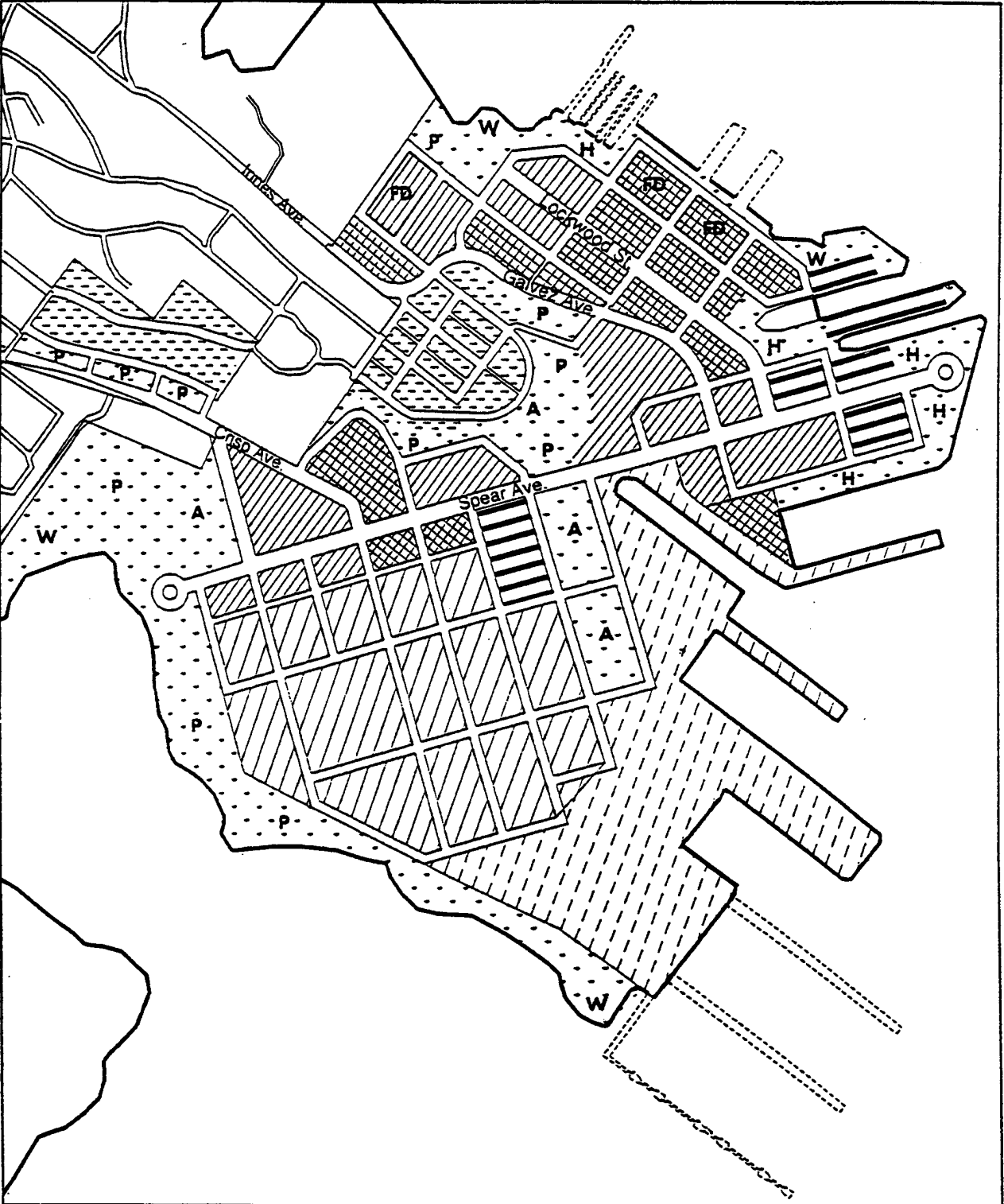
Dry Docks 2, 3, and 4 with associated wharves.

2. Other buildings in the Project Area which are proposed for retention/rehabilitation and long-term use, if financially feasible, include:

101
103
104
110
117
134
281
439
606
808
813

Buildings not listed above, will be further analyzed by the Agency to determine the potential for long-term retention.

MAP 1: Land Use Plan



HUNTERS POINT SHIPYARD REDEVELOPMENT PROJECT

January 7, 1997

E. Density Bonus

The Agency may grant, as a form of local public subsidy, residential density bonuses. These bonuses, if granted, shall insure that additional low or moderate income dwelling units will actually be produced within the Project Area. The Agency shall grant such bonuses only after a developer has demonstrated to the Agency's satisfaction that it has utilized its best effort to provide such low or moderate income dwelling units.

For the purpose of this paragraph, "density bonus" means an increase of up to 15 percent over the otherwise maximum allowable density provisions of this Plan. The Agency shall adopt rules governing procedures and conditions under which such bonuses will be administered. Other Agency implementing responsibilities, such as the review of architectural designs, shall not be affected by the granting of such bonuses.

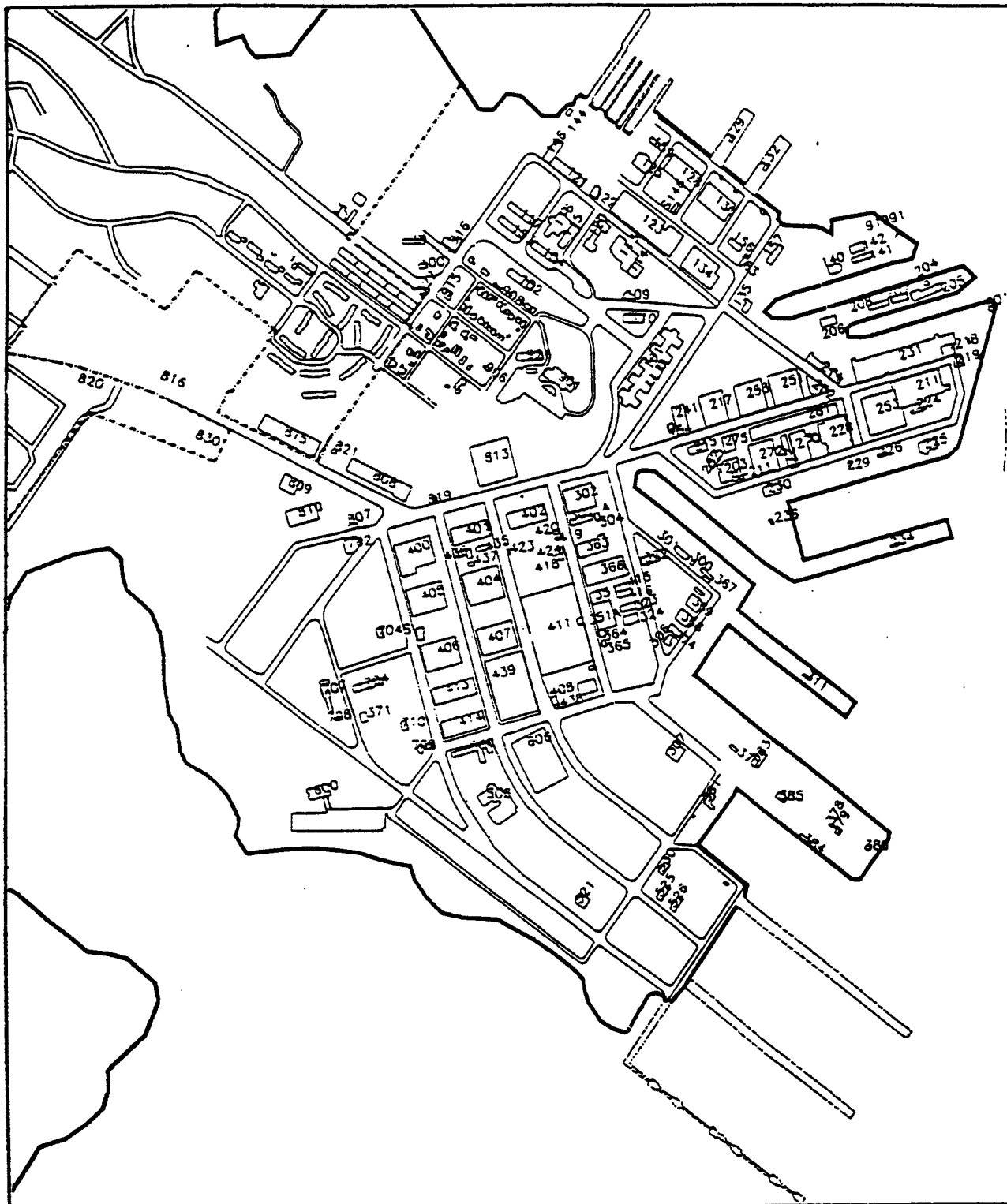
F. Streets Plan

The Streets Plan for the Hunters Point Shipyard Project Area is identified on Map 3. The categories of streets include the following:

1. Major Arterial Streets
2. Collector Streets
3. Local Streets
4. Transit Streets

The Project's street pattern contributes to the establishment of its fundamental land use patterns, and in doing so, becomes an integral element of the overall urban design for the Project. It is, however, recognized that there is a need for some degree of adaptability and flexibility in locating and configuring some of the Project's local streets and alleys at the time of actual physical development.

MAP 2: Existing Buildings



SCALE: 1"=1000'

Building Numbers are
U.S. Navy Designations



III. PROJECT PROPOSALS

A. Rehabilitation and New Development

All new development and all rehabilitation of existing structures must conform to this Plan, and to all applicable Federal, State and local laws.

All permanent utilities shall be placed underground.

Permanent or temporary off-site signs, including but not limited to billboards, are prohibited within any Land Use or street area.

Plans for rehabilitation and new development shall be submitted to the Agency for architectural review and approval.

To the extent now or hereafter permitted by law, the Agency may pay for, develop, or construct any building, facility, element of infrastructure, structure or other improvement either within or outside the Project Area, for itself or for any public body or entity, provided that such building, facility, element of infrastructure, structure or other improvement would be of benefit to the Project Area.

B. Owner and Tenant Preference

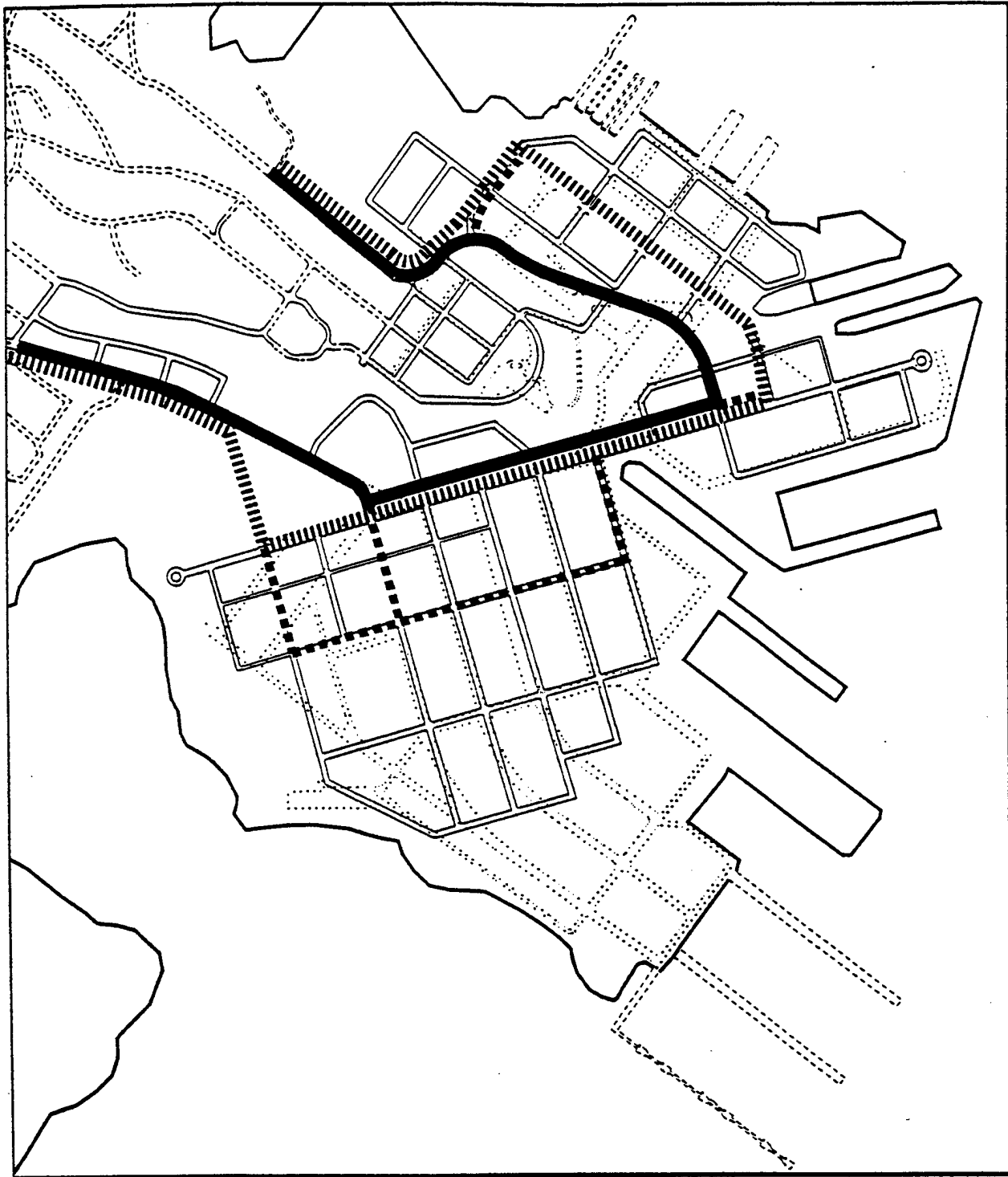
Persons who are either owners or tenants of businesses, or other types of real property within the Project Area being displaced by rehabilitation, Agency property acquisition, or other Agency action occasioned by the implementation of this Plan shall be afforded certain preferences. The Agency shall extend preferences to such persons in order that they may re-enter the redeveloped Project Area. The Agency will administer such preferences through a Certificate of Preference Program. Participants in this program necessarily will be subject to and limited by the requirements of this Plan.

C. Acquisition of Real Property



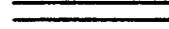

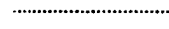
Any real property located within the Project Area may be acquired by the Agency by purchase, gift, devise, exchange, condemnation, lease, or any other lawful method, including utilization of the power of eminent domain, if one or more of the following conditions are met:

1. The building is substandard to a degree requiring clearance as demonstrated by a structural inspection of the property.
2. The property must be acquired in order to eliminate an environmental deficiency, including but not limited to: incompatible land uses, small and irregular lot subdivision, or overcrowding of the land.
3. The property must be acquired in order to eliminate impediments to land development through assembly of land into parcels of reasonable size and shape, served by an improved street system and public utilities.
4. The building must be removed in order to effect a change in land use as provided in this Plan.
5. Without the consent of an owner, the Agency shall not acquire any real property on which an

MAP 3: Street Plan



SCALE: 1"=1000'

-  Major Arterial
-  Collector
-  Local Streets/Alleys
-  Transit Streets
-  Existing Streets



HUNTERS POINT SHIPYARD REDEVELOPMENT PROJECT

January 7, 1997

existing building is to be continued on its present site and in its present form and use unless such building requires structural alteration, improvement, modernization or rehabilitation, or the site or lot on which the building is situated requires modification in size, shape or use or it is necessary to impose upon such property any of the standards, restrictions and controls of the Plan and the owner fails or refuses to agree to participate in the Redevelopment Plan.

6. The Agency shall not acquire real property to be retained by an owner pursuant to an Owner Participation Agreement unless said owner fails to enter into or perform under that agreement.

7. The Property is offered to the Agency by the United States Navy or any other Federal Agency.

In order to eliminate the conditions requiring redevelopment and in order to execute the Plan, it is in the public interest and is necessary for the power of eminent domain to be employed by the Agency, to acquire real property in the Project Area which cannot be acquired by gift, devise, exchange, purchase or any other lawful method pursuant to the authorization of this Plan. The power of eminent domain shall be limited to a period not to exceed 12 years after adoption of this Plan.

The Agency is authorized to acquire structures without acquiring the land upon which those structures are located. The Agency is also authorized to acquire any other interest in real property less than full fee title.

D. Acquisition of Personal Property

Where necessary in the execution of this Plan, the Agency is authorized to acquire personal property in the Project Area by any lawful means except eminent domain.

E. Property Management

During such time as any property in the Project Area is owned or leased by the Agency, such property shall be under the management and control of the Agency and may be leased or sub-leased.

F. Payment of Taxes

The Agency may in any year during which it owns property in this Redevelopment Project pay directly to the City or any district, including, but not limited to, a school district, or other public corporation for whose benefit a tax would have been levied upon such property had it not been exempt, an amount of money in lieu of taxes.

A proportionate share of any amount of money paid by the Agency to the City shall be disbursed by the City to any school district with territory located within this redevelopment Project Area in the City. "Proportionate share," means the ratio of the school district tax rate, which is included in the total tax rate of the City to the total tax rate of the City.

The Agency may also pay to any taxing agency with territory located within a project area other than the community which has adopted the Project, any amount of money which in the Agency's determination is appropriate to alleviate any financial burden or detriment caused to any taxing agency by this Redevelopment Project.

G. Relocation

The Agency will provide relocation assistance and benefits in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended, and will meet applicable Federal, State, and local regulations. A review of the current Project Area indicates that there are no persons currently residing therein. Accordingly, relocation activities would relate solely to businesses. However, since the possibility of a residential tenancy may exist prior to Plan termination, provisions for benefits and assistance to residential tenants have been set forth within this Plan.

If residents are displaced during the duration of the Plan, it is the Agency's objective that all eligible Project Area residents be rehoused, with a minimum of hardship, in accommodations which are decent, safe, sanitary and suitable to their individual needs; be located in an area not less desirable than the Project Area in regard to public utilities and public and commercial facilities, with reasonable access to their places of employment; and be provided housing priced within their financial means. The Agency will also assist those business concerns which may be displaced as a result of Project activities.

The Agency shall make relocation payments to eligible families and individuals displaced by redevelopment for moving expenses, for rental assistance, or for downpayment assistance. Eligible business concerns displaced by redevelopment shall likewise receive compensation and reimbursement for business displacement, for moving expenses, for direct losses of certain personal property otherwise uncompensated, for expenses incurred in-lieu of moving and related expenses. Such relocation payments presently required, as well as those which may be required in the future, shall be made pursuant to federal rules and regulations, as they now exist or may hereafter be amended; and such payments shall be made only to the extent eligible for payment from funds made available for those specific purposes by the federal government or other sources.

The Agency is authorized to provide temporary relocation benefits for residents and businesses displaced by the acquisition of property by the Agency, or during the course of Agency assisted rehabilitation work pursuant to this Plan.

H. Demolition and Clearance

The Agency is authorized to demolish and clear buildings, structures, and other improvements from real property owned by the Agency in the Project Area as necessary to carry out the purposes of this Plan.

I. Public Improvements and Public Facilities

The Agency is authorized to install and construct or to cause to be installed and constructed the public improvements, public facilities, and public utilities, on any parcel within or outside the Project Area, appropriate or necessary to carry out the Plan. Such public improvements and public facilities may include, but are not limited to streets, curbs, gutters, sidewalks, pedestrian bridges, street lights, street trees, sewers, storm drains, traffic signals, electrical distribution systems, natural gas distribution systems, water distribution systems, small boat harbors, parks, playgrounds, police and fire stations, and libraries.

J. Preparation of Building Sites

The Agency is authorized to prepare or cause to be prepared as building sites any real property in the Project Area owned or leased by the Agency.

K. Disposition of Real Property

For the purpose of this Plan, the Agency is authorized to sell, lease, sub-lease, exchange, subdivide, transfer, assign, pledge, encumber by mortgage or deed of trust, or otherwise dispose of any interest of real property.

Any real or personal property acquired by the Agency in the Project Area shall be sold or leased for development in accordance with the Plan and for consideration. However, the Agency may convey real property to the City or to any other public body with or without consideration.

Property containing buildings or structures rehabilitated by the Agency shall be offered for resale within one year after completion of rehabilitation or an annual report concerning such property shall be published by the Agency as required by law.

The Agency shall reserve such powers and controls in the disposition and development documents as may be necessary to prevent transfer, retention, or use of property for speculative purposes and to insure that development is carried out pursuant to this Plan.

All purchasers or lessees of property shall be obligated to use the property for the purposes designated in this Plan, to begin and complete development of the property within a period of time which the Agency fixes as reasonable, and to comply with other conditions which the Agency deems necessary to carry out the purposes of this Plan.

In the disposition of any property which would include the sale of liquor, the Agency shall, among other conditions, establish reasonable hours for such sales.

L. Disposition and Development Documents

To provide adequate safeguards to ensure that the provisions of this Plan will be carried out and to prevent the recurrence of blight, all real property sold, leased, or otherwise conveyed by the Agency shall be made subject to the provisions of this Plan by lease, deed, contract, agreement, declaration of restrictions, or other means. Where appropriate, as determined by the Agency, such documents or portions thereof shall be recorded in the Office of the Recorder of the County of San Francisco.

The leases, deeds, contracts, agreements, and declarations of restrictions may contain restrictions, covenants running with the land, rights of reverter, powers of termination, conditions subsequent, equitable servitudes, or any other provision necessary to carry out this Plan.

All property in the Project Area sold, leased or conveyed by the Agency shall be made subject by appropriate documents to the restriction that there shall be no discrimination or segregation based upon race, color, religion, national origin, sexual orientation, gender, identity, marital or domestic partner, status, age, or disability or ancestry, in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of property in the Project Area. In addition, such property shall be made subject to the restriction that all deeds, leases, or contracts for the sale, lease, sublease, or other transfer of land in the Project Area shall contain such nondiscrimination and nonsegregation clauses assure required by law. All deeds, leases, or contracts for the sale, lease, sublease or other transfer of any property in the Project Area shall contain the nondiscrimination clauses prescribed by Section 33436 of the California Health and Safety Code.

M. Disposition of Personal Property

For the purposes of this Plan the Agency is authorized to sell, lease, exchange, transfer, assign, pledge, encumber, or otherwise dispose of personal property that has been acquired by the Agency.

N. Replacement Housing

Whenever dwelling units housing persons and families of low or moderate income are destroyed or removed from the low- and moderate-income housing market as part of this redevelopment project, the Agency shall, within four years of such destruction or removal, rehabilitate, develop or construct, or cause to be rehabilitated, developed or constructed, for rental or sale to persons and families of low or moderate income an equal number of replacement dwelling units at affordable rents within the project area or within the territorial jurisdiction of the Agency.

O. Redeveloper's Obligations

In order to provide adequate safeguards that the process of redevelopment will be carried out pursuant to the Plan, agreements for the disposition of land by the Agency shall include provisions recognizing and requiring that:

1. The purchase of land is for redevelopment and not for speculation and reserving to the Agency such powers and controls as may be necessary to prevent transfer, retention or use of the property for speculation purposes.
2. The land shall be built upon and/or improved in conformity with the development standards of the Plan and any applicable Agency regulations, the Design for Development, and the Declaration of Restrictions.
3. All developers and owner participants shall submit preliminary architectural plans, site and landscape plans and final plans including landscaping and sign plans, and specifications of the improvements proposed to be constructed on the land for architectural review and approval by the Agency in order to insure that development and construction will be carried out in a manner which will effectuate the purposes of the Plan. As a part of such plans and specifications, developers and, if required by the Agency, owner participants shall submit time schedules for the commencement and completion of such improvements. All such plans and schedules shall be submitted within the time specified in the respective agreements with such developers and owner participants.
4. By and for the contracting parties, their heirs, executors, administrators, and assigns, there shall be no discrimination against or segregation of any person or group of persons on account of race, color, religion, national origin, gender, sexual orientation, gender identity, marital or domestic partner status, age, disability, or ancestry in the sale, lease, sublease, transfer, use, occupancy, tenure, or enjoyment of the premises therein described, nor shall the contracting parties, or any person claiming under or through them establish or permit such practice or practices of discrimination or segregation with reference to the selection, location, number, use, or occupancy of tenants, lessees, subleases, or vendees in the premises described. All deeds, leases or contracts for the sale, lease, sublease, or other transfer of any land shall contain the nondiscrimination and non-segregation clauses specified in Section 33436 of the California Health and Safety Code.

IV. METHODS FOR PROJECT FINANCING

A. General

Upon adoption of this Plan by the Board of Supervisors, the Agency is authorized to finance this Project with assistance from the United States Government, including the Department of Housing and Urban Development (HUD), the Department of Defense (Office of Economic Adjustment) as well as from other federal programs, from the State of California, from the City, from Agency bonds, or from other available sources.

The Agency is hereby authorized to issue bonds, obtain advances, borrow funds and create indebtedness in carrying out the Plan. The principal and interest of such advances, funds, and indebtedness may be repaid from any funds which may appropriately be available to the Agency.

Any other loans, grants, or financial assistance from the United States, or any other public or private sources will also be utilized, if available.

B. Tax Allocation

Taxes, if any, levied upon the taxable property in the Project Area each year by or for the benefit of the State of California, the City, any district, or other public corporation, after the effective date of the ordinance approving this Plan, shall be divided as follows, in accordance with Section 33670 of the Health and Safety Code:

"(a) That portion of the taxes which would be produced by the rate upon which the tax is levied each year by or for each of said taxing agencies upon the total sum of the assessed value of the taxable property in the redevelopment project as shown upon the assessment roll used in connection with the taxation of such property by such taxing agency, last equalized prior to the effective date of such ordinance, shall be allocated to and when collected shall be paid into the funds of the respective taxing agencies as taxes by or for said taxing agencies on all other property are paid (for the purpose of allocating taxes levied by or for any taxing agency or agencies which did not include the territory in a redevelopment project on the effective date of such ordinance but to which such territory has been annexed or otherwise included after such effective date, the assessment roll of the county last equalized on the effective date of said ordinance shall be used in determining the assessed valuation of the taxable property in the project on said effective date); and

(b) That portion of the levied taxes each year in excess of that amount shall be allocated to and when collected shall be paid into a special fund of the redevelopment agency to pay the principal of and interest on loans, moneys advanced to, or indebtedness (whether funded, refunded, assumed or otherwise) incurred by the redevelopment agency to finance or refinance, in whole or in part, the redevelopment project. Unless and until the total assessed valuation of the taxable property in a redevelopment project exceeds the total assessed value of the taxable property in that project as shown by the last equalized assessment roll referred to in paragraph (a) hereof, all of the taxes levied and collected upon the taxable property in the redevelopment project shall be paid to the respective taxing agencies. When the loans, advances, and indebtedness, if any, and interest thereon, have been paid, all moneys thereafter received from taxes upon the taxable property in the redevelopment project shall be paid to the respective taxing agencies as taxes on all other property are paid."

Not less than 20 percent of all taxes which are allocated to the Agency pursuant to Health and Safety Code Section 33670 and Section IV. B. (b) of this Plan shall be used by the Agency for the purposes of

increasing, improving and preserving the community's supply of low- and moderate-income housing available at affordable housing cost, as defined by Section 50052.5 of the California Health and Safety Code, to persons and families of low or moderate income, as defined in Section 50093, to lower income households, as defined in Section 50079.5, and to very low income households, as defined in Section 50105.

In the proceedings for the advance of moneys, making loans or the incurring of any indebtedness (whether funded, refunded, assumed or otherwise) by the Agency to finance or refinance, in whole or in part, the Hunters Point Shipyard Redevelopment Project, the portion of taxes set forth in said Law and said Constitution (as the same may exist on the date of the making of said advances or loans or the incurring of indebtedness) as available to the Agency for such purposes may be irrevocably pledged for the payment of the principal of and interest on such loans, advances, or indebtedness.

It is anticipated that the amount of taxes to be produced by the method described in Subsections (a) and (b) above may be sufficient to support a bond(s) issue in the range of \$ 221 million. In addition, it may become necessary and appropriate to issue bonds to be partially repaid from taxes allocated pursuant to Subsections (a) and (b) above. Therefore, the amount of bonded indebtedness which can be outstanding at any one time from the issuance of bonds to be repaid in whole or in part from the allocation of taxes pursuant to Section 33670 of the California Health and Safety Code shall be limited to \$221 million. In order to adequately fund the repayment of such bonds (including principal, interest, and issuance cost), the number of dollars of taxes which may be divided and allocated to the Redevelopment Agency pursuant to Section 33670 of the California Health and Safety Code shall be limited to \$881 million.

No loans, advances, or indebtedness to finance the redevelopment project in whole or in part and to be repaid from the allocation of taxes pursuant to Section 33670 of the California Health and Safety Code shall be established or incurred by the Agency after July 14, 2017.

The Agency shall not pay indebtedness or receive property taxes pursuant to Section 33670 of the California Health and Safety Code after July 14, 2042.

Bond issues, the principal and interest of which the Agency proposes to pay with tax allocations under Health and Safety Code 33670, are subject to Board of Supervisors approvals, as are all bond issues of the Agency; where the Agency proposes to utilize tax allocations for other than repaying principal and interest on bond issues, the Agency shall prepare, for the approval of the Board of Supervisors, an annual Project work program, which program shall outline in detail the activities to be undertaken by the Agency, the loans and/or advances to be received and/or the indebtedness to be incurred.

V. ACTIONS BY THE CITY

The City, by the adoption of this Plan, agrees to aid and cooperate with the Agency in carrying out this Plan and shall take any further action necessary to ensure the continued fulfillment of the purposes of this Plan and to prevent the recurrence or spread in the Project Area of conditions causing blight. Such actions shall include but not be limited to the following:

- A. Prior to termination of the Plan, revision of zoning within the Project Area to conform to the land uses and development authorized by this Plan.
- B. Institution and completion of proceedings necessary for changes and improvements in publicly-owned utilities within or affecting the Project Area.
- C. Performance of the above and of all other functions and services relating to public health, safety, and physical development normally rendered in accordance with a schedule which will permit the redevelopment of the Project Area to be commenced and carried to completion without unnecessary delays.
- D. Referral shall be made to the Agency prior to approval by the City of each building permit application in the Project Area. No building permit shall be issued unless it conforms to this Plan.
- E. The City is authorized, but not obligated to provide funds to ensure the completion of the Project as a whole in accordance with this Plan.
- F. The undertaking and completing of any other proceedings necessary to carry out the Project.

VI. PROCEDURE FOR AMENDMENT

This Plan may be amended by means of the procedure established in Section 33450-33458 of the California Health and Safety Code, or by any other procedure hereafter established by law.

VII. PROCEDURE FOR MINOR VARIANCE

The land use provisions within this Plan shall be applied by the Agency in order to achieve the purposes of the Redevelopment of this Project Area. In regard to minor variances from the land use provisions in this Plan, the Agency may, in its discretion, permit such minor variances where, owing to unusual and special conditions, enforcement would result in undue hardships, or would constitute an unreasonable limitation beyond the intent and purposes of these provisions, subject to the condition that the Agency shall find and determine that such modification results in substantial compliance with the intent of these land use provisions.

VIII. DURATION OF PLAN

This Plan shall be effective until July 15, 2027 except for the nondiscrimination and non segregation provisions which shall continue in perpetuity. Any declaration of restrictions formulated pursuant to this Plan may contain provisions for the extension of such Declaration of Restrictions for successive periods.

IX. ENFORCEMENT OF PLAN

The provisions of the Plan and other documents formulated pursuant thereto may be enforced by the Agency in any manner authorized by law.

X. SEVERABILITY

If any provision, section, subsection, subdivision, sentence, clause or phrase of the Plan is for any reason held to be invalid or unconstitutional, such decision shall not affect the validity of the remaining portion or portions of the Plan.

**Design for
Development**

**HUNTERS POINT
SHIPYARD**

REDEVELOPMENT PROJECT

August, 1997

San Francisco Redevelopment Agency
San Francisco Department of City Planning (APPROVED BY THE CPC
ON AUG. 28, 1997)

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I. INTRODUCTION

The Redevelopment Plan for the Hunters Point Shipyard Project, as approved by the San Francisco Board of Supervisors, establishes the land use standards for the development of the project area. This document, approved by both the City Planning Commission and the Redevelopment Agency Commission, outlines the design objectives and contains the development standards and urban design guidelines which apply to the project.

Architects and developers, in their joint efforts, are encouraged to attain architectural and environmental excellence in the Hunters Point Shipyard Redevelopment Area. To this end, design review will be directed at producing a safe and attractive environment befitting San Francisco while enhancing the financial investment in the project area.

The standards and guidelines for development presented herein shall apply to all new construction in the Project. Where applicable, the development standards contained herein shall also apply to rehabilitation in the Project. In such instances, the document entitled "Minimum Property Standards for Rehabilitation" should be specifically referred to. Development standards shall be subject to minor variances duly granted by the Agency Commission.

An architect registered in the State of California should be engaged to design the building or buildings to be constructed. The design professional must also utilize, as necessary, members of associated design professions, including engineers and landscape architects. A registered civil engineer must review and certify final foundation plans and grading plans.

II. DEFINITION OF TERMS

Articulation:

Minor variations in the massing, setback, or height of a building, such as bay windows, porches, entrances or eaves.

Bulk:

These standards specify the maximum physical dimensions of upper stories of new buildings. For greater detail on bulk standards, please refer to Article 2.5 of the City Planning Code.


Density:

These standards specify how many dwelling units can be built on a parcel of land. For example, in the high density residential areas of the hill, the density standard calls for no more than one dwelling unit for every 600 square feet of lot area.

Design Guidelines:

The Design Guidelines outline and illustrate design recommendations for both private and public design and construction activities at the Shipyard. Projects that are consistent with these recommendations will implement the goals and objectives for physical improvements at the Shipyard that have been endorsed and adopted by the Citizens Advisory Committee and all appropriate City agencies.

Development Standards:

These are rules that will govern the development and build-out of the shipyard. They specify land uses and their locations, building heights, intensities and form. All development standards are designated in this document with the symbol .

Facade:

Front of a building facing a street.

Floor Area Ratios (FAR):

These ratios specify how much commercial development is permitted on a specific site. A 1-to-1 (1:1) FAR means that for every square foot of lot area, one square foot of commercial activity could be developed on the site. For a 2 to 1 (2:1) FAR two square feet of commercial use could be developed for every square foot of lot area. Live/work and dwelling units are excluded from the FAR calculations in order to encourage their development in upper stories of new buildings at the Shipyard.

Frontage:

Lot width along a primary street.

Massing/Building Envelope:

The exterior shape of a building.

Modulation:

Major variation in the massing, height, or setback of a building.

Street wall:

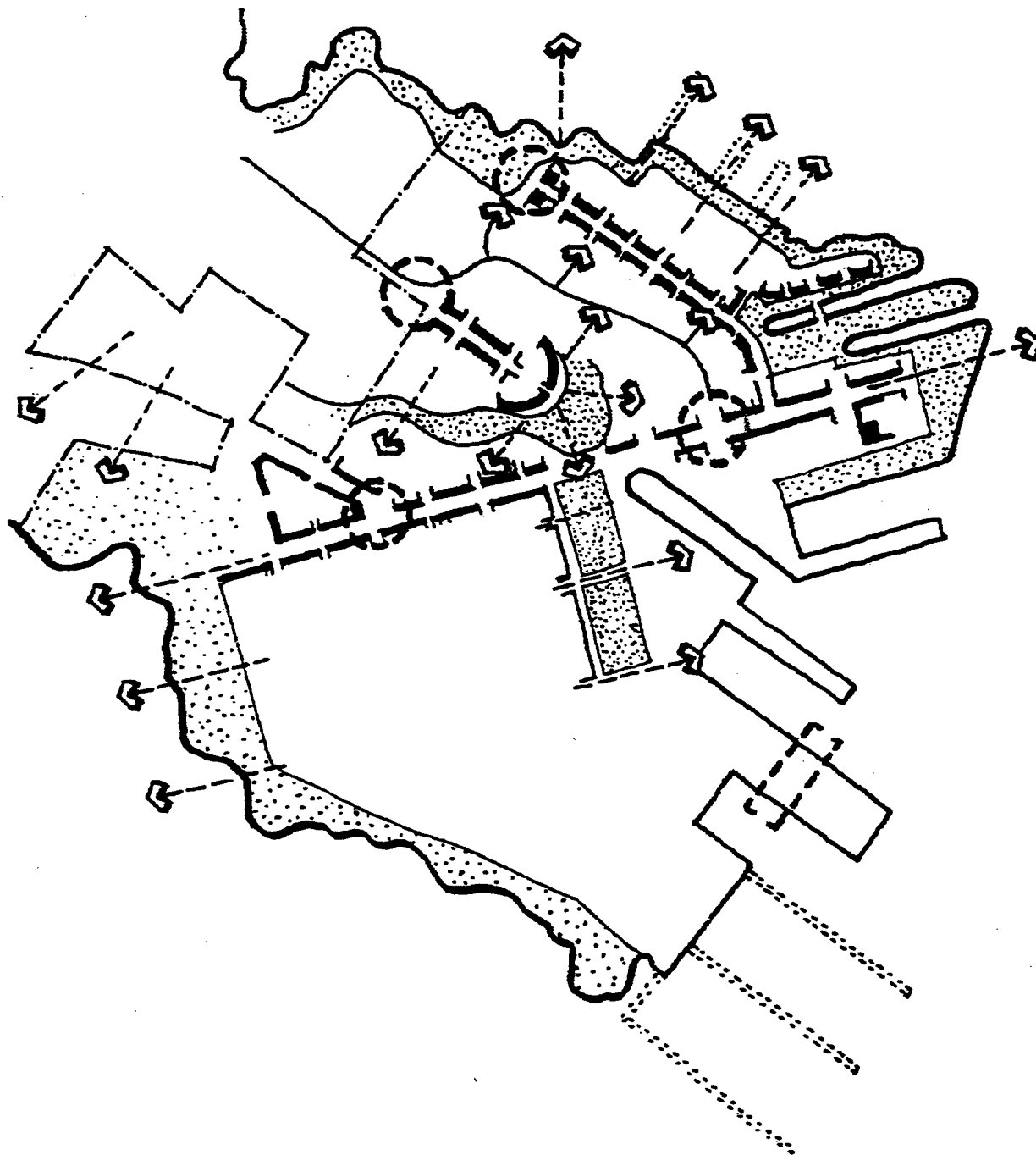
Continuous facade of buildings along a street frontage lot width along a street.

III. DESIGN OBJECTIVES

The following overall design considerations shall be examined in the design review process:

1. Compliance with the objectives of the Redevelopment Plan.
2. Compliance with objectives and policies of the General Plan, the City Planning Code and with all applicable codes and ordinances of the City and County of San Francisco as modified by the express provisions of the Redevelopment Plan including this Design for Development.
3. Consistency with the design guidelines.
4. Achieving a visually attractive and distinctive design which reflects the character of a distinct urban neighborhood oriented toward education, arts, and industry.
5. Achieving a balance between the preservation of natural resources and development on the site.
6. Providing continuity with the community's history and culture by conserving and enhancing historic resources.
7. Maximizing the opportunity for views within the development and promoting the preservation and enhancement of views from the adjacent sites and neighborhoods.
8. Creation of an urban building scale and relationship of development to the streets.
9. Integration of the pattern of streets and development with the adjacent existing areas.
10. The relationship of all improvements to adjacent buildings to promote a harmonious composition and transition between building masses, open spaces, materials, colors and textures.
11. Integration of off-street parking and loading facilities with the overall development, their functional relationship to the overall vehicular circulation system and effective screening from public view.
12. Achieving quality of a pedestrian and bicycle circulation system which is safe, efficient and convenient - one which connects activity areas and open spaces, and provides public access to the shoreline.
13. Enhancement and further development of transit service to the area.

-
14. Development of transportation facilities that provide:
 - accessibility for commerce, employment, and residents
 - mobility
 - multiple modes of transportation
 - safety
 - convenience
 - connectivity to the existing city street grid and transportation systems
 - quality of design and environment
 - flexibility
 15. Achieving quality of landscape elements which would promote harmonious landscape design throughout the Shipyard.
 16. Integration of spaces and building forms with the topography of the building site.
 17. Addressing concern about the roof elements and treatment of large roof areas that may be seen from the future residential community of Hill Point.



Hunters Point Shipyard
Figure 1

KEY URBAN DESIGN CONCEPTS



Strong Built Edge



Open Space



Views



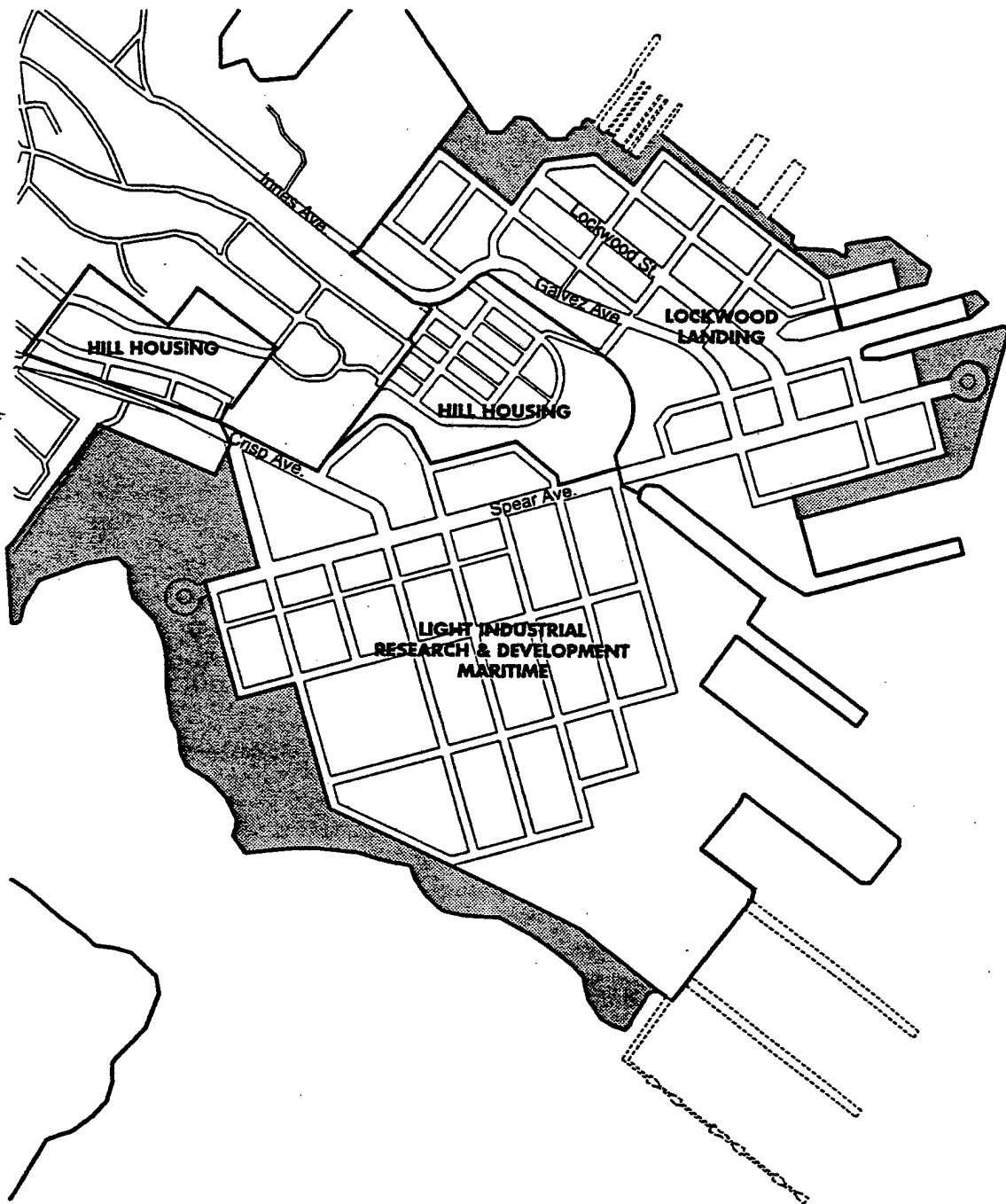
Points of Arrival

Hunters Point Shipyard

◆ Design for Development



NORTH



Hunters Point Shipyard
Figure 2

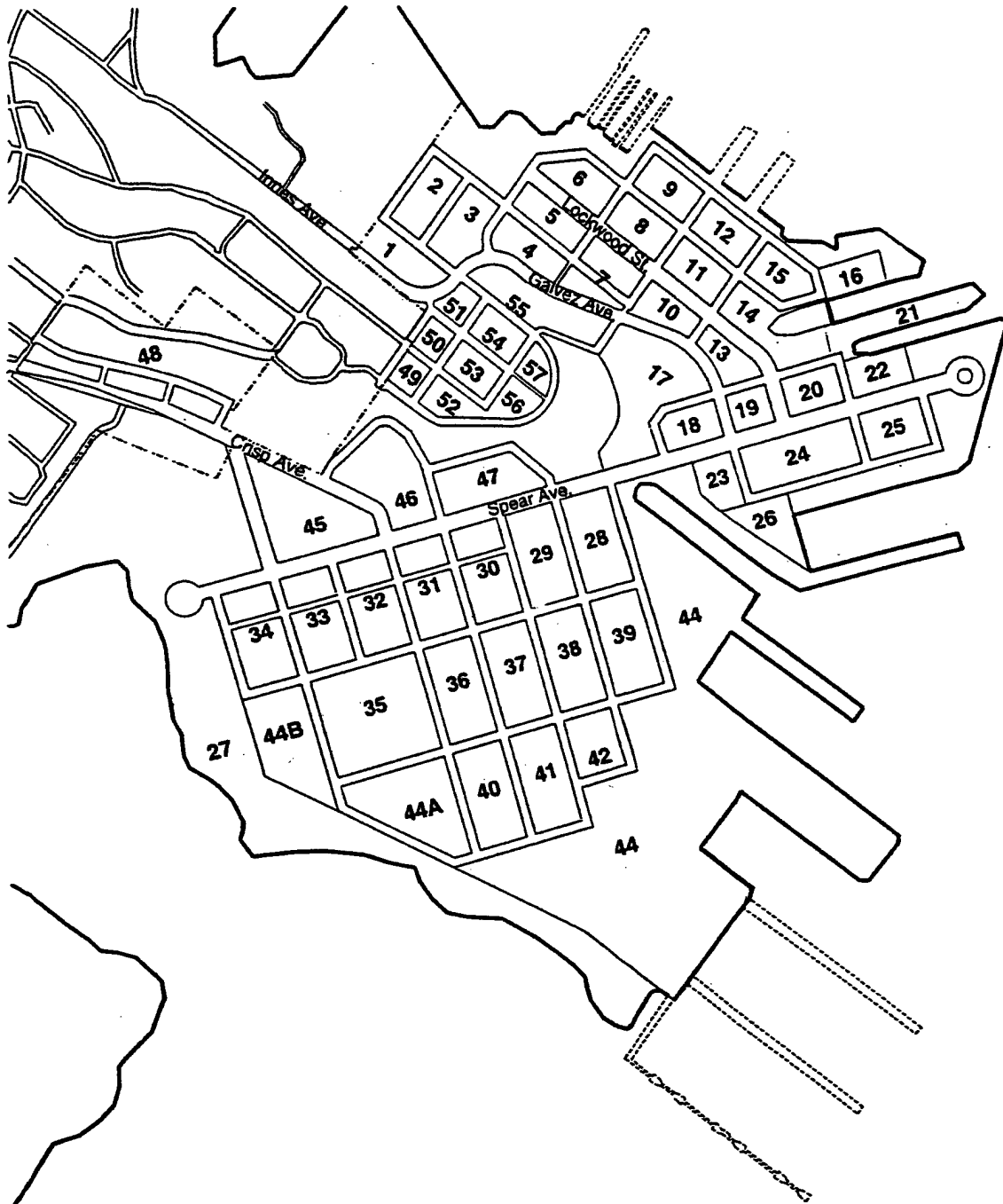
AREA LOCATION MAP



Waterfront Open Space



NORTH



Hunters Point Shipyard
Figure 3

DEVELOPMENT BLOCK MAP



IV. DEVELOPMENT STANDARDS

Height and Bulk

The height of structures within the Project Area shall not exceed the standards identified on the map entitled "Height and Bulk Limitation Map" (Figure 6). The boundaries of the various height districts shall be generally as indicated on that map and are subject to minor adjustments at the time of final site planning for a specific development proposal. The bulk of structures shall be shaped by the standard interpretation of Article 2.5 of the City Planning Code. In the Hill Point Park and Lockwood Landing areas, specific heights may vary at certain locations along secondary streets. In no event, however, shall the building heights exceed those shown on Figure 6, "Height Limitation Map" (unless a low-income housing bonus is granted under this Section).

Within the Industrial and Maritime Industrial districts, the height limit may be increased by up to 25% upon the adoption, by the Agency Commission, of specific findings of economic necessity applicable to a particular physical development project and upon receipt of a letter from the Director of Planning finding the proposed height bonus consistent with the urban design policies of the General Plan. The finding by the Director of Planning shall occur within ten working days when such time is requested by the Agency: failure to meet such a time limit shall be deemed to be a waiver of the right to comment on the proposed height increase.

Density of Housing

The density of housing (dwelling units per acre) shall not exceed:

- 73 DU/acre on Blocks 50, 51, 53 and 54.
- 54 DU/acre on Blocks 1, 4, 7, 8, 10, 11, 13, 14, 46, 47, 56 and 57.
- 29 DU/acre on Blocks 48, 49, 52 and 55.

For all residential development in the Project Area, the minimum density shall be 18 units per acre and the maximum density shall be 73 units per acre.

Area Coverage

The percentage of land and/or parking podium that may be covered by residential buildings in Blocks 1, 4, 7, 8, 10, 11, 13, 14, 46, 47, 48, 49, 50, 51, 52, 53, 54 and 55 shall not exceed 65 percent. To the maximum extent feasible, the open space shall be provided at ground level. The amount of land coverage for non-residential buildings shall be determined by applying the floor area ratios as shown on Figure 5, "Floor Area Ratio Map".

Density Bonus

Density bonuses for housing development may be awarded by the Agency to developers in order to encourage the provision of low and/or moderate income housing. Such bonuses are deemed to be a local housing assistance program. Bonuses may be granted in an amount up to 15% above what would otherwise be permitted under the terms set forth in this document.

Off-Street Parking and Loading

The maximum number of off-street parking spaces that may be permitted is as follows:

- Residential: two for each dwelling unit.
- Live/work: two for each dwelling unit.
- Hotel: one for each 16 guest bedrooms plus one for the manager's dwelling unit, if any.
- Retail Stores: one for each 500 sq. ft. of occupied floor area where the occupied floor area exceeds 5,000 sf.
- Restaurants: one for each 200 sq. ft. of occupied floor area where the occupied floor area exceeds 5,000 sf.
- Industry: one for each 1,500 sq. ft. of occupied floor area where the occupied floor area exceeds 7,500 sf.
- Art & Cultural Activities: one for each 2,000 sq. ft. of occupied floor area, where the occupied floor area exceeds 7,500 sf.
- Education and Training Facilities: one for each two classrooms

When the calculation of off-street parking spaces results in a fractional number, a fractional number of one-half or more shall be adjusted to the next higher whole number of spaces.

Off-street loading spaces shall be provided for the following gross square feet of floor area:

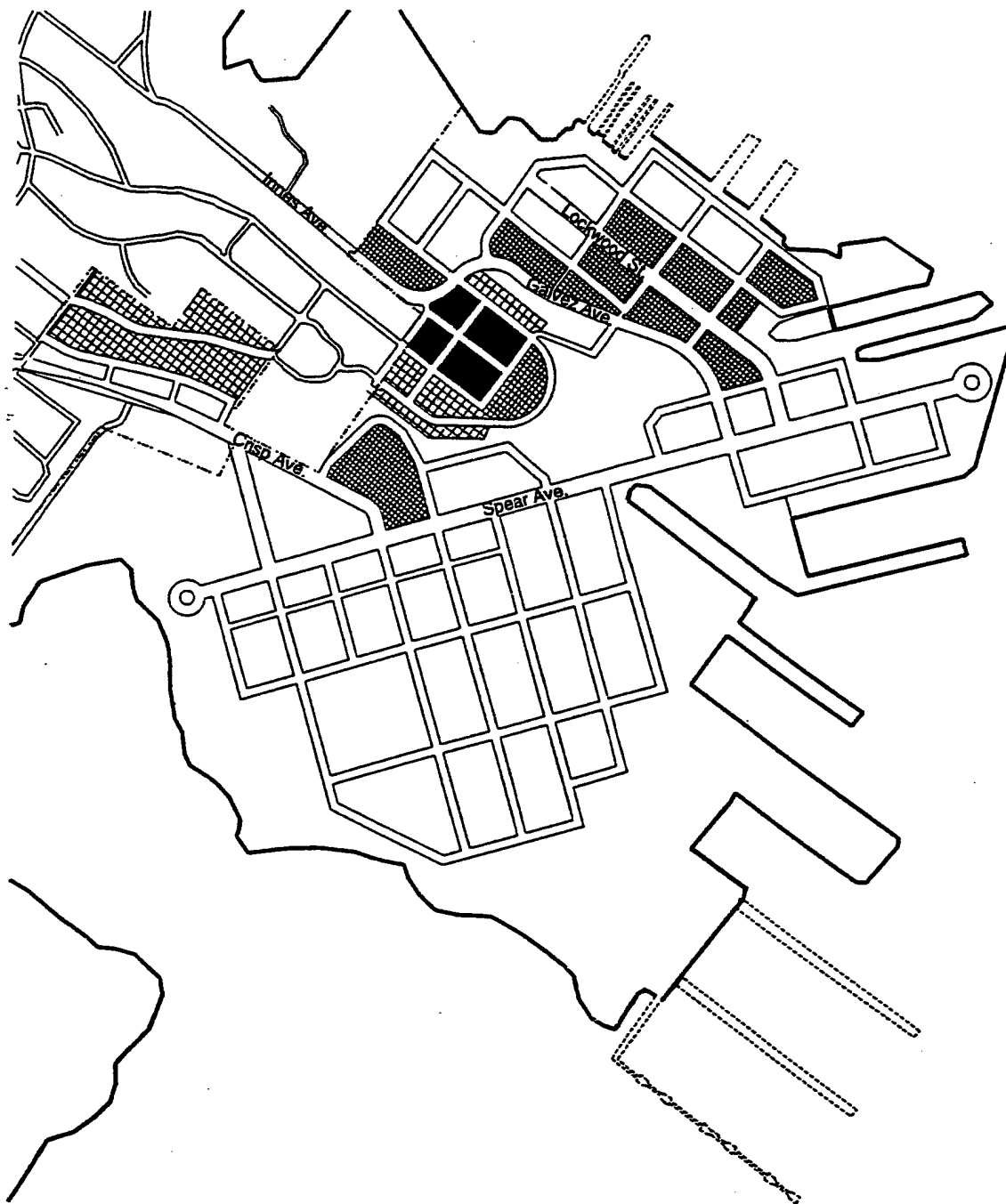
- Retail Stores, Industry & Live Work units:
 - None for 0-10,000 sq. ft.
 - 1 for 10,001-60,000 sq. ft.
 - 2 for 60,001-100,000 sq. ft.
 - 3 for over 100,000 sq. ft. plus 1 for each additional 80,000 sq. ft.
- All other uses:
 - None for 0-100,000 sq. ft.
 - 1 for 100,001-200,000 sq. ft.
 - 2 for 200,001-500,000 sq. ft.
 - 3 for over 500,000 sq. ft. plus 1 for each additional 400,000 sq. ft.

Open Space

Usable, easily accessible open space (including outdoor living, recreation or landscaped yards, decks, balconies, porches and roofs) shall be provided for each dwelling unit as follows:

- Blocks 50, 51, 53 and 54: 80 sq. ft. minimum.
- Blocks 1, 4, 7, 8, 10, 11, 13, 14, 46, 47, 56 and 57: 100 sq. ft. minimum
- Blocks 48, 49, 52 and 55: 125 sq. ft. minimum.




At the developer's choice, common open space standards may be substituted for the standards shown above. These standards shall be as stated in Section 135 (g) of the City Planning Code.



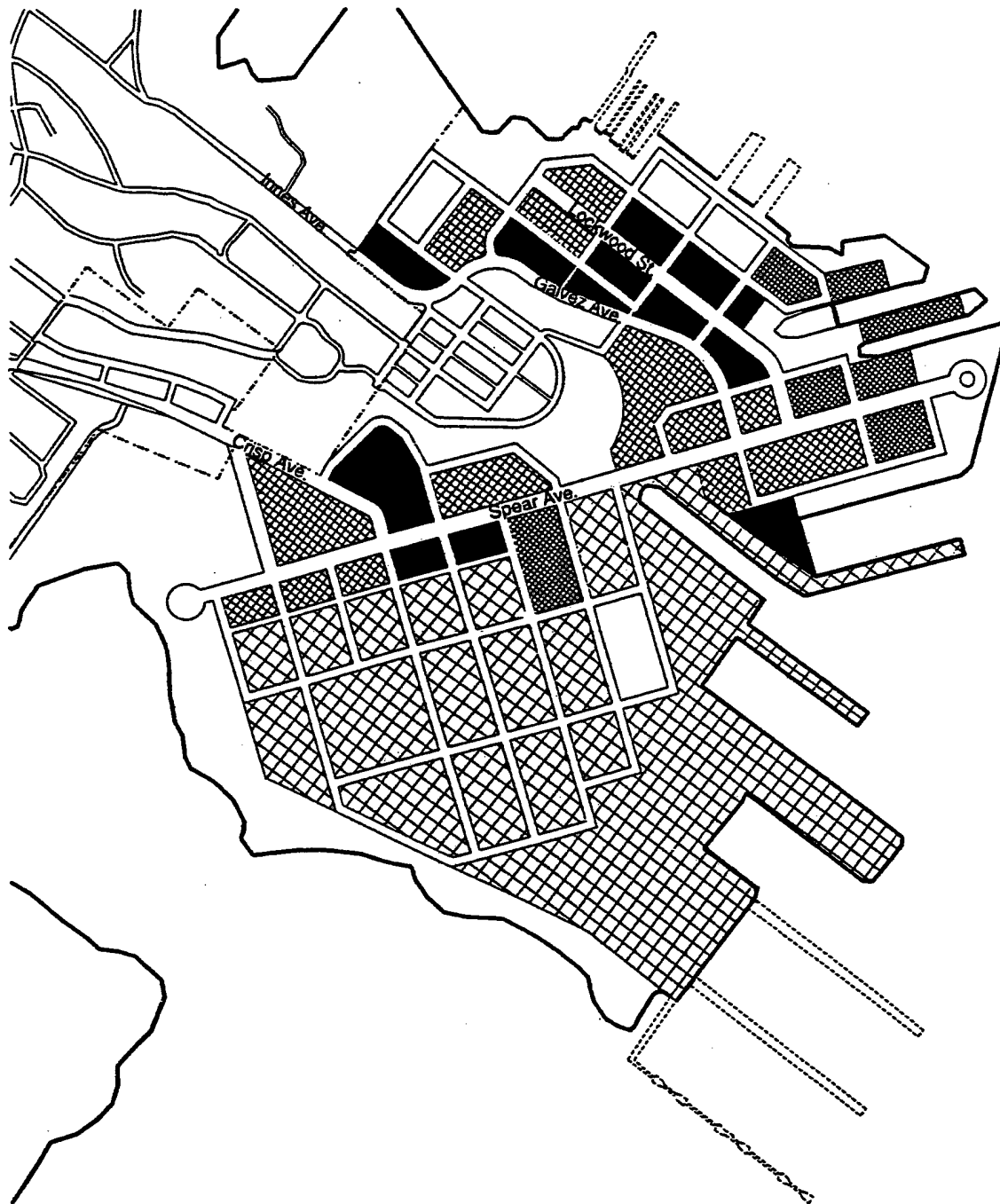
Hunters Point Shipyard
Figure 4

DWELLING UNIT DENSITY

(Maximum Density Permitted)

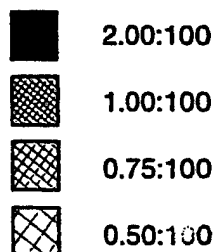
-  73 DU/acre = 1/600 sf
-  54 DU/acre = 1/800 sf
-  29 DU/acre = 1/1,500 sf





Hunters Point Shipyard
Figure 5

FLOOR AREA RATIO MAP



V. DESIGN GUIDELINES

The Redevelopment Plan for the Hunters Point Shipyard calls for the transformation of the site into one which would welcome diverse populations, provide visual reference to the past, assure outstanding, creative new design of interest and variety, and facilitate the attraction of businesses, large and small, that would offer attractive new employment opportunities. These *Design Guidelines* translate that vision into a series of specific design recommendations which will serve those who build and those who review building proposals at the Shipyard.

The *Design Guidelines* outlined below provide guidance as to the preferred design character for development and redevelopment. Developers, owners and tenants as well as public entities proposing to improve, renovate, or construct new facilities at the Shipyard should refer to these *guidelines* before initiating a design process. If an owner or developer desires to build in a manner which is not consistent with these guidelines, it is the responsibility of that party to make a convincing case that the proposed project improves upon the *guidelines* and fully satisfies the Design Objectives provided in Section III of this document

- ★ All items that are identified with a star-shaped bullet are Development Standards, and therefore should be given greater status in the design process.

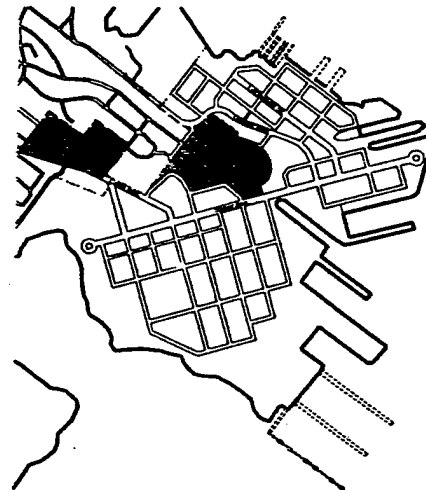
**AREA #1:
HILL HOUSING
AREA**

Hill Point Neighborhood

Key Map

General Concepts

The Hill Point Neighborhood ("Hill Point") occupies a prominent site at the southern end of the hillside residential district which characterizes this part of Bayview Hunters Point (see Key Map). Street layout, parcelization and design guidelines for Hill Point are focused upon preserving, enhancing and sharing the best physical features of the site, assuring variety and interest at a pedestrian scale and resulting in a neighborhood of overall design coherence and distinctive image.



As envisioned at full development, the Hill Point neighborhood would be characterized by its success in achieving a mix of housing types, unit sizes and building designs. A walk along the residential streets on the hilltop would reveal front doors, porches and building entrances facing the street, varied facades and materials, and glimpses into mid-block open spaces which would combine to establish a pleasant pedestrian environment. Gathering spots would include the local coffee shop or grocery tucked along the main street, the shared children's play areas and the Hill Point Park with views of the surrounding districts and a sizable vista of San Francisco Bay. Viewed from below, from Candlestick Point or surrounding hillsides, the distinctive design of the crescent housing would establish the Hill Point image. Living on the hill would offer the clear physical sense of a cohesive neighborhood with eyes on the street and much to gain from the maintenance of its distinctive design qualities.

The guidelines call for a moderate density residential neighborhood, with variety in the type of units and a pedestrian-friendly character. Development of approximately 800 new dwelling units is anticipated, organized to maximize excellent views to the water and accentuate the hill form without disrupting the urban pattern when viewed from other areas. The two Hill Point residential parcels consist of the hilltop parcel and the western hillside parcel (see Key Map).

The core of the residential area at the top of the hill is recommended for the greatest density and height to accentuate the hill crest. The housing on the side streets overlooking the bluffs is recommended for lower heights and densities with one- and two-family dwellings separated to allow views between the buildings. Buildings along the Hill Point Crescent demand special design attention, as they provide a strong identity for the neighborhood.

- ★ Items identified with a star-shaped bullet are Development Standards and therefore have greater status in the design process.

The "Hill Area Urban Design Concept Plan" (Figure 7) shown on the next page illustrates the general pattern of blocks, roadway layout, private and public spaces, view orientation, and linkages to surrounding residential areas that is anticipated on the site, subject to the specific proposals of residential builders, developers and owners. To assist potential developers and project review teams, illustrative plans and sketches are provided which demonstrate the flexibility of these guidelines and the range of ways they may be applied to accomplish the design objectives for the Shipyard.

Density

The housing area is divided into three density types (Section IV, Development Standards).

- highest density (73 units/acre, or 1 unit/600 square feet) at the top of the hill
- moderate density (54 units/acre, or 1 unit/800 square feet) at the southern tip of the hill
- lower density (29 units/acre, or 1 unit/1500 square feet) on the steep sides of the hill, along Kirkwood and Hudson, and on the western hillside parcel

A build out of approximately 600 units on the hill top parcel and 200 units on the western hillside parcel is anticipated.

Use

- encourage a mix of multi-family and single family units, as appropriate within the density and height limits.
- integrate small-scale, ground-floor, neighborhood-serving retail into the neighborhood fabric as appropriate.

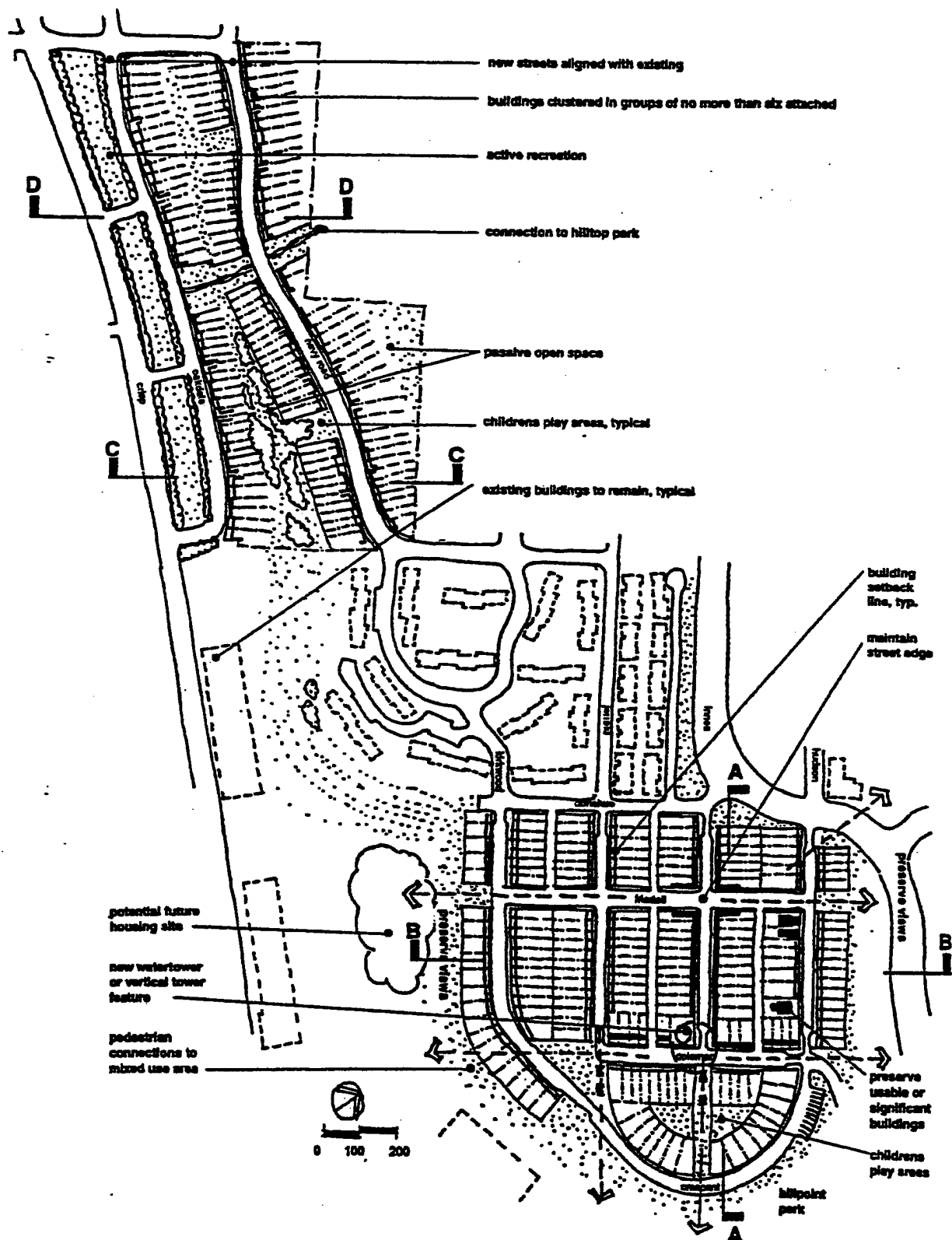
Heights

Please see Development Standards for map indicating heights.

- 50 foot maximum height to accentuate the top of the hill
- 40 foot maximum height to mark the southern curve of the hill, and on the western hillside parcel
- 32 foot maximum height to step down the sides of the hill

Lots & Frontage

- establish a pattern of development that either utilizes a regular lot width of typical residential character, or reflects design articulation every 25 feet.
- allow multiple lot usage for development, with design techniques utilized to maintain the pattern of variety in texture, color, materials or building profile at 25-foot intervals. Building entrances placed approximately every 25 feet will serve this objective.
- encourage single lot development for lots on the north side of Hudson, the south side of Kirkwood and for the lots on the crescent.



Hunters Point Shipyard
Figure 7

AREA #1: HILL AREA URBAN DESIGN CONCEPT PLAN

- discourage setbacks on Innes Avenue Extension.
- reserve one or two parcels at the heart of the crescent residential block at the southern tip of the hill, sponsored by owners/developers in the area, for construction of an attractive and protected children's play area to serve neighborhood families and provide a link to Hill Point Park.
- preserve land for pedestrian ways which link the neighborhood to other activities in the Project Area, including Hill Point Park and the Central Sports Park, the commercial area and urban waterfront at Lockwood Landing and the Spear Avenue mixed use area.

Street Design

Residential Streets

- create a quiet, comfortable feeling in the residential areas of the Hilltop.
- discourage fast traffic, and encourage walking as a recreational activity.
- make transit access to other points in the Shipyard and City convenient.

Residential Alleys:

- provide minimum width to allow for maximum lot area for open space or dwelling units while leaving sufficient passage for emergency vehicles.
- utilize narrowness and staggered bulbs to induce slower traffic speeds to allow alleys to double as recreational space.
- allow 10-12 feet wide curb cuts; allow sidewalk space for streetlights, signs, or trees.

Parking

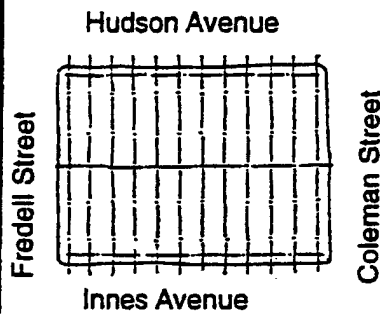
- pair garages to minimize curb cuts with maximum ten foot driveways.
- prohibit surface parking lots. Screen parking from pedestrian view.
- allow on-street guest parking, and encourage introduction of alleys in wide blocks providing access to residential garages or potentially to additional units on deep lots.

Architecture

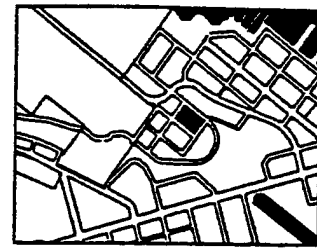
- ⊕ orient all buildings with a primary entrance from the street.
- texture and detailing of building facades visible from public streets should be consistent with similar residential districts in the City (e.g. variation in material, bay windows, pitched roofs, porches, stoops, etc)
- provide ten foot wide sidewalks.
- ⊕ provide street trees on all streets, with additional trees and benches at the intersections.
- encourage site and structural design which is energy and resource efficient, consider use of both active and passive solar systems along with other approaches; maximize sun exposure of public and private open spaces.

ILLUSTRATIVE EXAMPLES - Hill Housing*

Block 53



- 25' wide standard lot size
- 10' wide minimum sidewalks
- Single lot, multiple lot or full block development possibilities



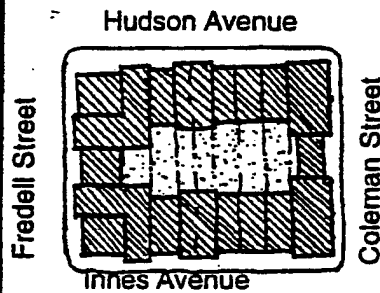
LOCATION MAP



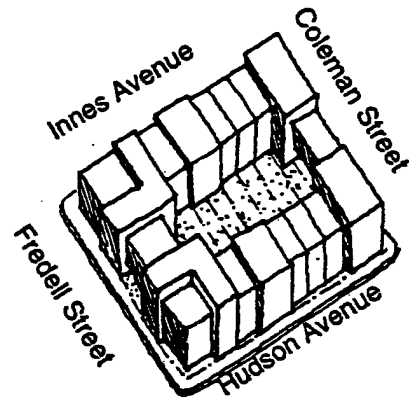
Building Placement

Building Massing

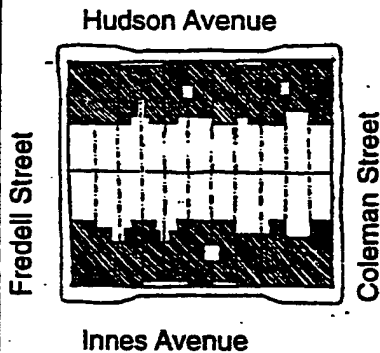
Full Block Development



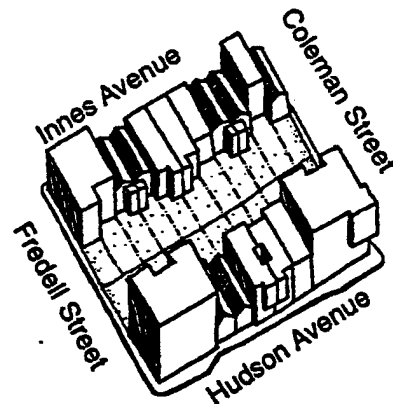
- Maximum density, 73 DU/acre
- 50' maximum height limit
- Primary building entrance from street



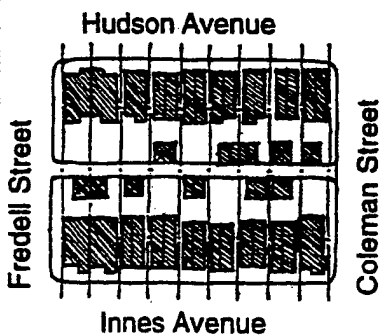
Single Lot Development



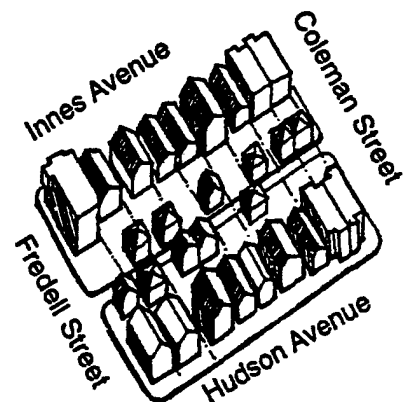
- Rear yard open space
- Larger buildings on corner lots



Single Lot Development with Alley

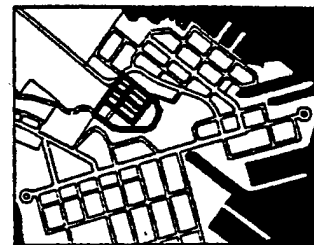
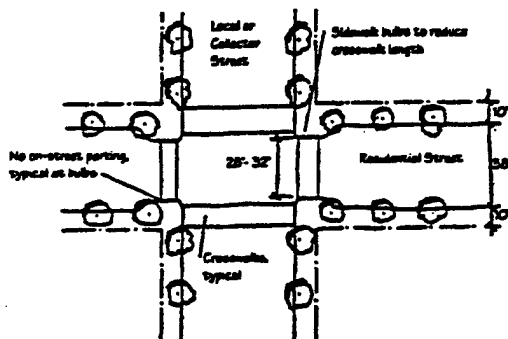


- Residential garages accessed from alley
- Potential additional above garage, accessed from alley

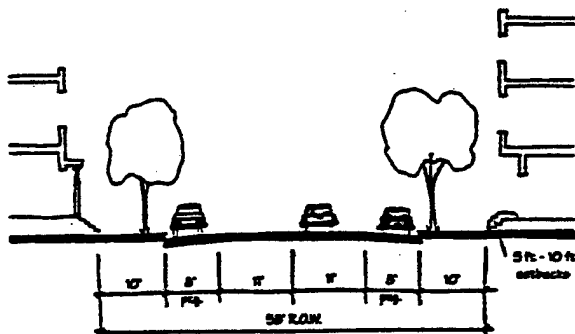


STREET DESIGN GUIDELINES - Hill Housing

Typical Residential Street



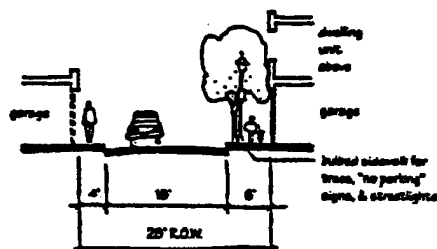
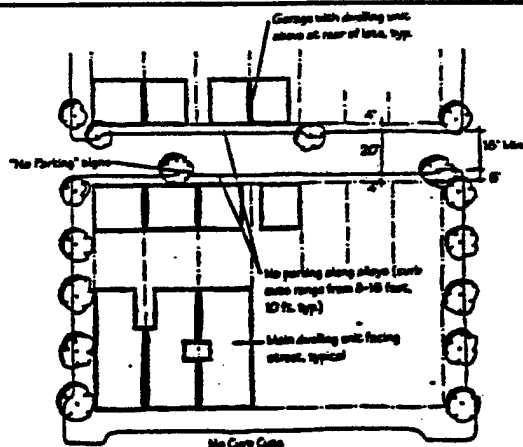
STREET LOCATION MAP



ILLUSTRATIVE SECTION

- ◆ Provide right-of-way width of 58 ft.
- ◆ Two travel lanes, each 11 ft in width.
- ◆ Two curb (parking) lanes, 8 ft wide
- ◆ Two 10 ft sidewalks.
- ◆ Corner sidewalk bulbs 12 ft long, increasing the sidewalk width to 15 ft at each side, and reducing the crosswalk to 28 feet wide where the residential streets intersect with other local or collector streets.
- ◆ One street tree every 25 ft
- ◆ No curb cuts where residential alleys provide access to rear garages.

Typical Residential Alley



ILLUSTRATIVE SECTION

- ◆ Provide right-of-way width of 28 ft.
- ◆ Two travel lanes, each between 9 and 10 ft wide.
- ◆ 2 ft corner sidewalk bulbs (at least one at each corner) accommodating street signs, trees or lights, and staggered to allow a minimum 18 ft right-of-way at all times.
- ◆ Two 4 ft sidewalks, entirely unobstructed to meet ADA standards.
- ◆ Curb cuts throughout to provide access to rear garages.
- ◆ No curbside parking permitted at any time along alleys.

Hill Point Park

guidelines for public design, with potential for private participation

General Concepts

Hill Point Park (the "Park") is intended to function as a neighborhood park serving all age groups and a wide variety of uses. The park is an open space area containing approximately three acres. It is located at the southeastern end of the Hill Point Neighborhood.

The Park is envisioned as informal and flexible with softscape (e.g., landscaping and grass) as well as hardscape (e.g., pavement and other hard surfaces) in areas that are heavily used. Since the site slopes significantly, a series of terraced areas could be considered. Pedestrian paths are recommended to connect the Park to the Central Sports Park and south from there to the waterfront, as well as to the commercial area on Spear Avenue and to Lockwood Landing Plaza.

Hill Point Park provides a panoramic overview of the Project Area, and a viewing area for on-site waterfront activities, as well as spectacular views of the Downtown, East Bay and South Bay. A formal landscaped viewing area with seating is recommended, somewhat separate from the neighborhood portion of the Park and provided with an appropriate number of parking spaces.

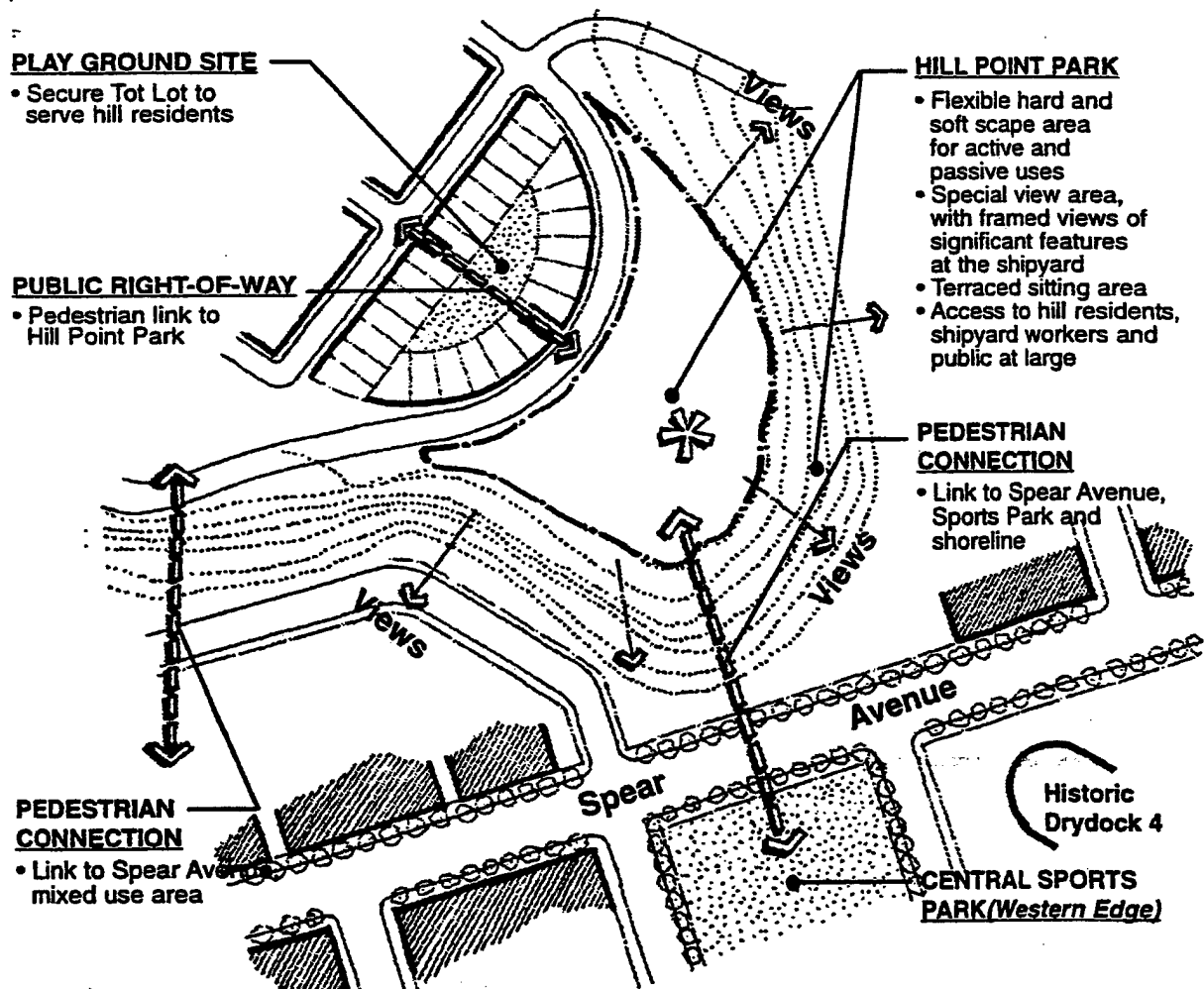
Linkages between this park and other open space, maritime and cultural uses in the Project Area should be sought. One recommendation has been that the Park, together with a new neighborhood center/museum building proposed for Lockwood Landing, be envisioned as an incubator of new concepts and ideas.

The "Hill Point Park Urban Design Concept Plan" (Figure 10) illustrates the general pattern of landscape, view orientation, play areas and physical linkages to surrounding areas that are envisioned for later park design.

Design Guidelines

- Design Hill Point Park as a neighborhood park with educational components integrated throughout the park features.
- Design the Park to serve all age groups.
- Provide a children's play area, sitting areas, picnic and barbecue areas, and lawn areas for softball, Frisbee and other informal ball games.
- Leave the larger portion of the Park as a flexible softscape which can be used and programmed according to the needs of the neighborhood residents.
- Enhance and frame views from the Park.
- Provide an overlook area somewhat separate from the neighborhood portion of the park with hardscape, and seating oriented towards the view, and parking.
- Plant trees and shrubs, to frame views, create spatial definition, provide wind protection and shady areas. Select plants which add sensory experiences through pleasing shapes, textures, colors, flowers and seasonal changes.

- ★ Provide a pedestrian connection to the commercial areas on Spear Avenue to the west of the hill and to the Central Sports Park, the waterfront and Lockwood Landing Plaza.
- Provide linkages and signage to regional bicycle and pedestrian trails.



Hunters Point Shipyard
Figure 10

HILL POINT PARK DESIGN CONCEPT

**AREA #2:
LOCKWOOD
LANDING
DISTRICT**

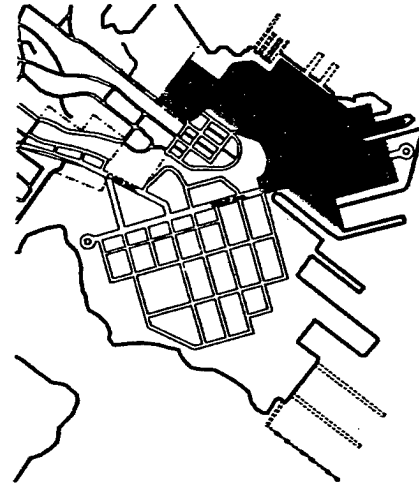
Lockwood Landing

Key Map

General Concepts

The Lockwood Landing District (the "District") is anticipated to be the primary mixed-use district in the Project Area serving residents, workers and visitors. A wide range of uses is encouraged: small business growth; media, arts and technology businesses; service retail and destination restaurants; artists studios and an arts marketplace; education facilities: a museum of Hunters Point Shipyard history and African American heritage; affordable live/work spaces; and residential units integrated with business uses in the District.

The *design guidelines* support the development of Lockwood Street and Lockwood Landing Plaza as attractive new urban spaces in San Francisco.



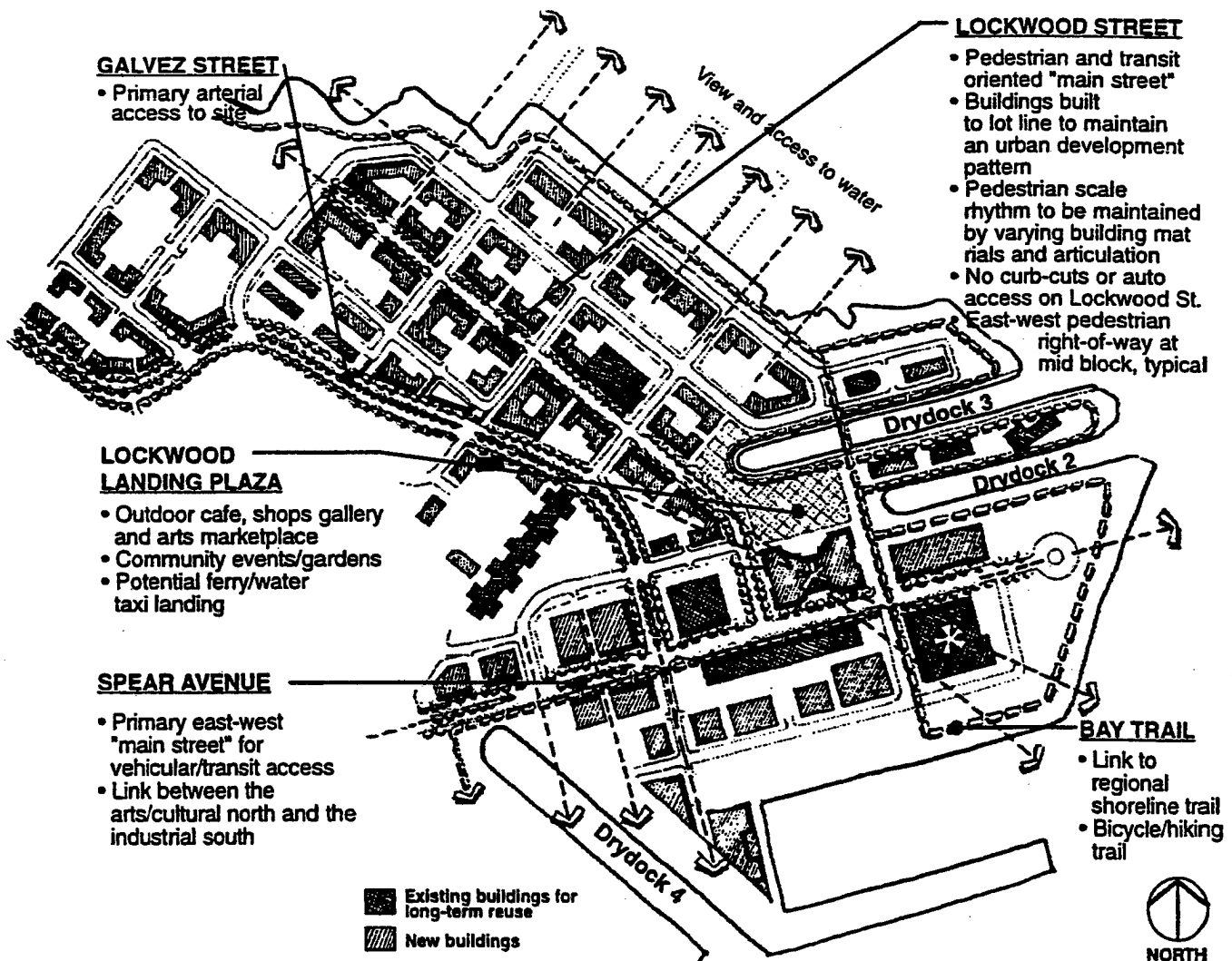
In this District, reviewers of development proposals will encourage entrepreneurial efforts, seek a mixture of uses and building types on each block, and reward creativity in the creation of flexible-use spaces with opportunities for incorporation of small business start-ups and arts-based activities. Viewed from the Hill Point Housing area, the urban design characteristics of this District will feature variety in heights and roof designs, a distinctive gateway to the north and signature building design for the cultural buildings to the south side of Lockwood Landing Plaza. Multiple view corridors and pedestrian walking routes through the District will maintain a constant awareness of the water's edge and the unique regional aspect of the site. And perhaps most important, the urban life and vitality along Lockwood Street will be reinforced by building and streetscape design characterized by frequent design changes, multiple building entrances, building activities visible from the sidewalk, and easy multi-modal access with a clear sense of priority given to pedestrian areas and needs.

- ★ Items identified with a star shaped bullet are Development Standards and therefore have greater status in the design process.

Planned as a moderate density commercial district with a pedestrian scale development pattern, the Lockwood Street mixed-use District will be connected with a pedestrian and transit-oriented "main street" loop. The mixed use area on Lockwood will encourage upper story housing or live/work and a variety of commercial enterprises, artist studios, retail, and business services on the ground floor.

The following design guidelines focus on providing a fine grain of development with frequent entrances, variation in building design and activities to achieve an attractive visual character. Buildings should be three to five stories with parking oriented to alleys and side streets. Views and access to the water's edge and to major historical and cultural buildings will play an important part in establishing the design character of the area. The District also includes the northern entry to the Shipyard which is anticipated to serve 75% of the access to the site by car, truck or transit.

The "Lockwood Landing Area Urban Design Concept Plan" (Figure 11) illustrates, the general pattern of blocks and lots, roadway layout, private and public spaces, and new and existing buildings. Specifically featured are historic structures surrounding Drydocks 2 and 3, new or reconstructed urban streets with a strong building edge and pedestrian/transit facilities, linked focal points in the district, and a system of shoreline trails. Multiple illustrative plans and sketches are provided to demonstrate the flexibility of the guidelines as applied to accomplish the design objectives for the Shipyard.



Hunters Point Shipyard
Figure 11

AREA #2: LOCKWOOD LANDING URBAN DESIGN CONCEPT

Building Intensity

- locate multi-story buildings along Lockwood Street, allowing for concentration of densities on the Lockwood Street frontage.
- concentrate densities at the west end of Lockwood Street, near Donahue Street to form a gateway to the District, taking advantage of outstanding views to downtown.
- to the extent feasible, provide density bonuses for structured parking off-site, and FAR exemptions for structured parking provided on-site.
- encourage live/work and residential units by excluding them from allowable FAR calculation, when combined with other uses.

Use

A wide variety of uses are allowed in this District (see Redevelopment Plan for a list of permitted uses). All arts-related spaces which are compatible with the primary use should be permitted in this District.

Heights

Maximum heights in this District range from 50 feet to 60 feet.

- heights may vary along Lockwood Street: 60 foot maximum at corners, with 50 foot maximum on remainder of block; two story minimum along Lockwood with 45 foot minimum within 50 feet of a corner.
- establish Galvez as major entry roadway lined with significant structures: 50 foot maximum, two story minimum.
- vary heights in cultural district: draw attention to historic buildings, maintain prominence of green glass building (building #253 on parcel 25), establish new public use structures which step up in height from the water's edge.
- enforce 50 foot maximum height on side streets.

Lots & Frontage

- ⊕ maintain a continuous streetwall on Lockwood Street. No building setbacks on Lockwood Street.
- ⊕ provide interest and variety at a pedestrian scale by allowing maximum building frontages of 50 feet, at which point the use must change or a significant modification in design (e.g. changes in materials, window design, colors or wall profiles as well as introduction of entries, or the utilization of environmental art) should occur.
- establish an urban character for the district by maintaining a streetwall for side streets, with a minimum of 50 percent of frontage as a built edge or heavy landscaping.
- ⊕ allow no curb cuts on Lockwood Street. Provide access to parking from alleys and side streets only.

- establish mid-block, east-west, pedestrian ways/emergency access on all district blocks, improving pedestrian circulation and maintaining open views to the waterfront.
- ✱ locate primary pedestrian building entrances on Lockwood Street.

Street Design

- accommodate multiple transportation modes including cars, trucks, buses, pedestrians and bicyclists on Lockwood Street, the main commercial and transit street for the Shipyard.
- design wider sidewalks for higher volume of pedestrian traffic.
- facilitate transit loading and pedestrian street crossings through appropriate design of bus and sidewalk bulbs.
- soften the visual impact of traffic and enhance the pedestrian experience through trees and landscaping.
- provide at least one transit transfer point, where two or more transit lines intersect, adjacent to a central plaza with transit information and services, and convenient bicycle access and adequate bicycle parking facilities.

Architecture

- ✱ avoid blank walls facing streets with a minimum of 50 percent of block length transparent. Where blank portions of walls cannot be avoided, use detail, texture, or modulation in a manner that is consistent with the small-scale architectural character of this district.
- ✱ modulate building massing at 25 to 50 foot intervals.
- vary materials and building articulation between ground and upper stories.
- ✱ provide pedestrian-scaled elements on ground floor facade (entries, windows, displays, details, awnings).
- provide visual variety between adjacent buildings with distinct design, materials, colors, while maintaining complementary features.
- in roof design, consider the quality of views over this area from the Hill Point Neighborhood and the image of the area from the water.
- ✱ encourage screening of unsightly roof mechanical equipment or cluster such elements so as to minimize their visual impact.
- industrial character in design is appropriate, however service areas should be carefully organized and screened from pedestrians, and special attention paid to the quality and interest of materials along pedestrian streets such as Lockwood.
- to the extent feasible, incorporate significant existing buildings with feasible long-term use potential into the design of the district, featuring their role in the history of the Shipyard.
- utilize topographic changes on blocks to open views to the water, and design pedestrian pathways and stairways from Hill to waterfront.

- encourage design excellence in all public facilities with special attention to the potential cultural/meeting/museum complex planned for the cultural area at Drydocks 2 and 3.
- encourage attention to design themes which link site and building design to ongoing site activities (e.g., energy conservation, environmental responsibility) and which would inform construction processes as well as set an example and disseminate ideas for new ways of manufacturing, doing business, living and building.
- ★ provide street trees at regular intervals.

Signs

Create signage or a signage program including the following:

- design and construct signs to be complementary elements in the total environment.
- provide signs which are of the size, shape, material, color, type of construction, lighting, and location to be in scale with and harmonious with development on the site and on adjacent sites in the district.
- reflect the arts, education, and industry theme for the Shipyard in the design and materials selection for signs.
- identify only the user and/or use of the particular property or portion thereof on each sign.
- no blinking, flashing, moving, or rotating signs.
- no roof signs or signs projecting above the parapet of any building.
- permit a maximum area of signage of a total of two square feet per linear foot of frontage.
- distinguish mixed use and residential districts by allowing no signs above the first floor.
- ★ no illuminated signage in upper levels of all residential developments.

Exceptions may be permitted for special features, lighting, and signage at gateways to the site and for important buildings and gathering areas.

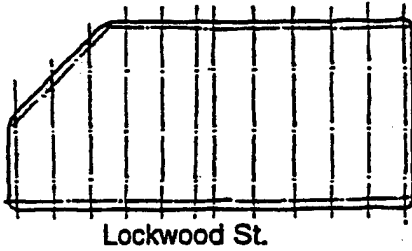
Arts at Lockwood Landing

Artists should be encouraged to work, live, display, sell and enjoy works of art throughout the Lockwood Landing Area.

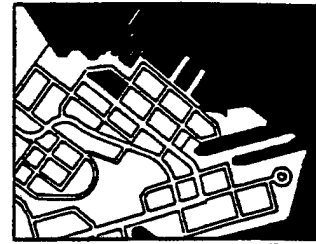
- consider the role of art and artists in major design initiatives at the Shipyard, including: environmental design of public ways, open space and entries; combined application of Percent for Art (per Arts Element, San Francisco General Plan) funds to the placement or commission of art and artisan works of high quality and distinction.

ILLUSTRATIVE EXAMPLES - Lockwood Landing*

Block 6



- Build to lot line on Lockwood Street
- 50% of frontage on side streets to be built edge or heavy planting
- 50' standard lot width, typical
- 20' wide, east-west mid block public right-of-way



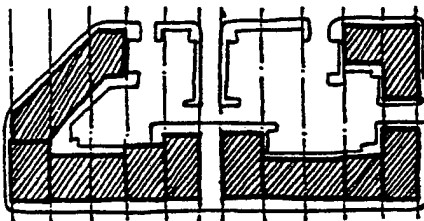
LOCATION MAP



Building Placement

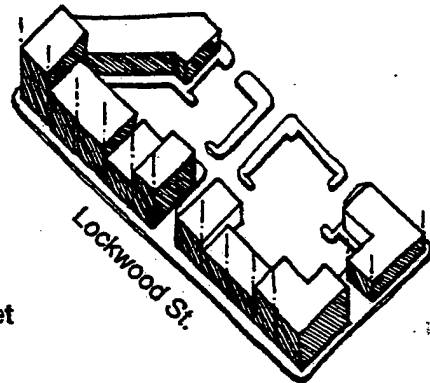
Building Massing

Multiple Owner Block

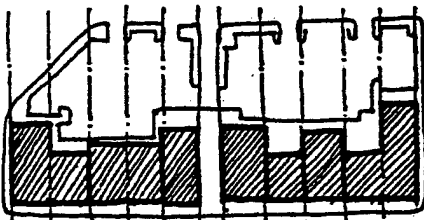


Lockwood St.

- 60' maximum height at corner lots and 50' maximum on remainder of block
- Modulate building massing at 25'-50' intervals
- Service and parking access from back street

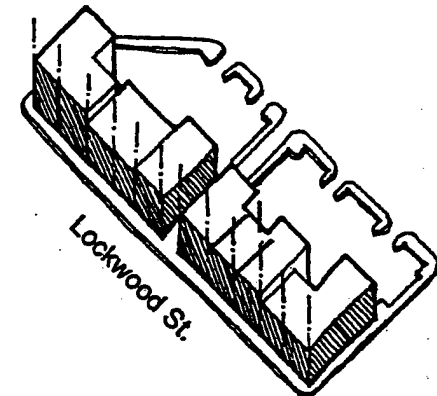


Concentrated Density on Lockwood

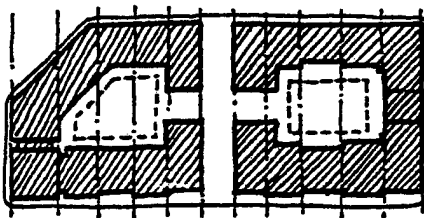


Lockwood St.

- Building density and height concentrated on Lockwood Street
- Service and parking access from back street
- Mid block pedestrian access from Lockwood Street

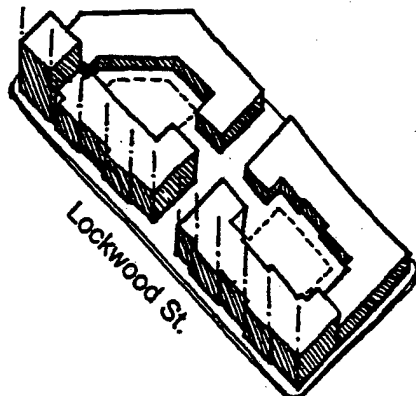


Single Owner Block



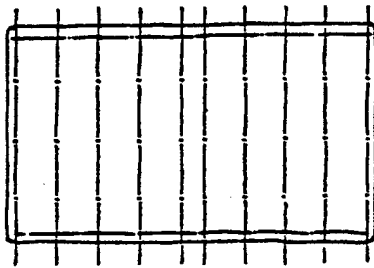
Lockwood St.

- Service and parking access from back street
- Modulate building massing at 25'-50' intervals
- Vary materials and building articulation between ground and upper floors



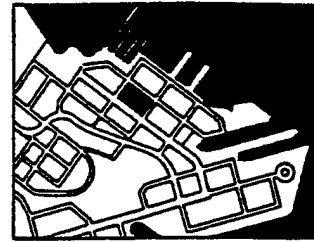
ILLUSTRATIVE EXAMPLES - Lockwood Landing*

Block 8



Lockwood St.

- Build to lot line on Lockwood Street
- 50% of frontage on side streets to be built edge or heavy planting
- 50' standard lot width, typical
- 20' wide, east-west mid block public right-of-way



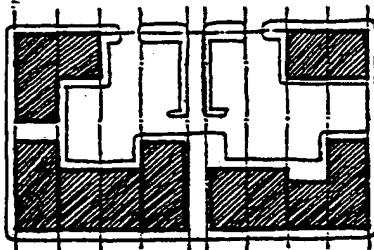
LOCATION MAP



Building Placement

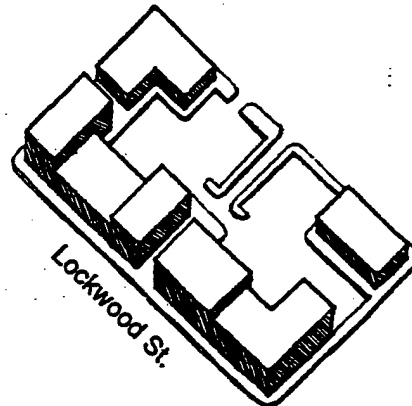
Building Massing

Multiple owner Block

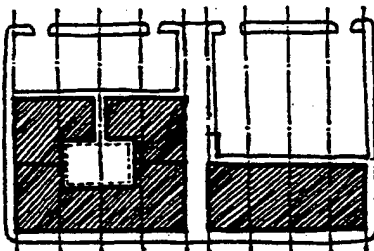


Lockwood St.

- Service and parking access from back street
- Primary building entry on Lockwood Street

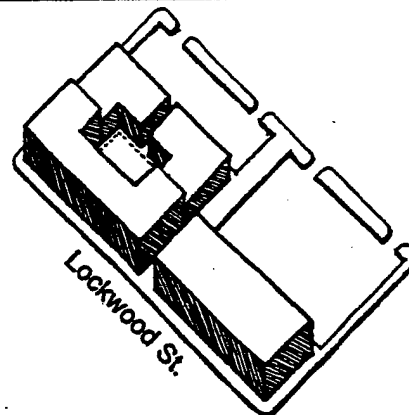


Two Owner Block

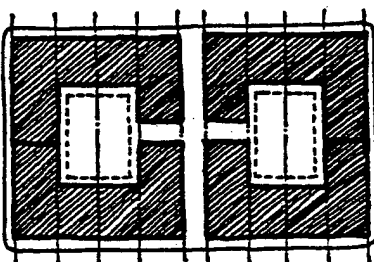


Lockwood St.

- Building density and height concentrated on Lockwood Street
- Primary building entire on Lockwood Street
- Mid block pedestrian access from Lockwood Street

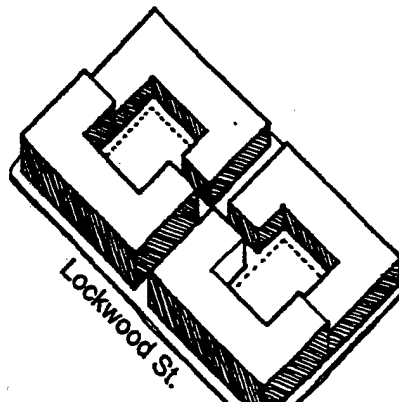


Single Owner with



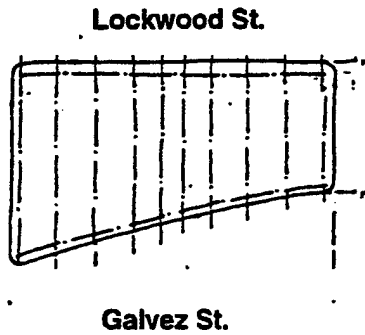
Lockwood St.

- Multistory buildings along Lockwood Street
- Ground floor commercial with upper floor live/work units

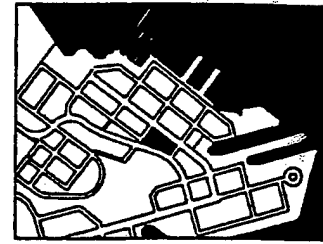


ILLUSTRATIVE EXAMPLES - Lockwood Landing*

Block 10



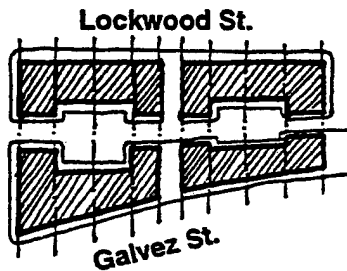
- Build to lot line on Lockwood Street
- 50% of frontage on side streets to be built edge or heavy planting
- 50' standard lot width, typical
- No curb cut on Lockwood Street
- 20' wide, east-west mid block public right-of-way



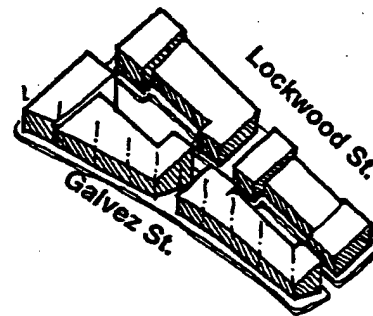
Building Placement

Building Massing

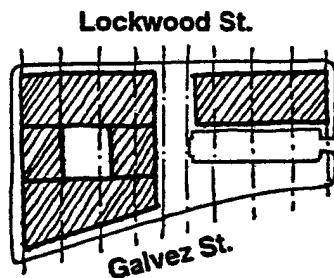
Multiple Owner Block



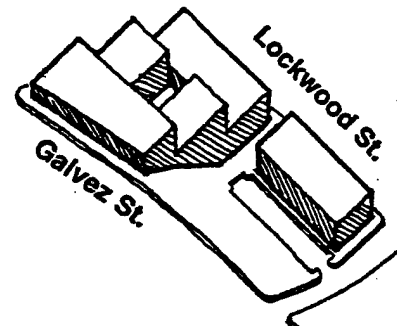
- Primary building entries on Lockwood and Galvez Streets
- Mid block, north-south alley for service
- Views to water



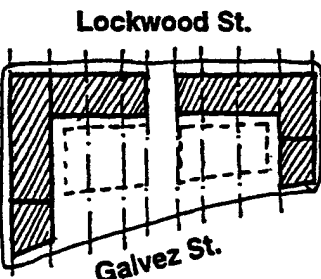
Two Owner Block



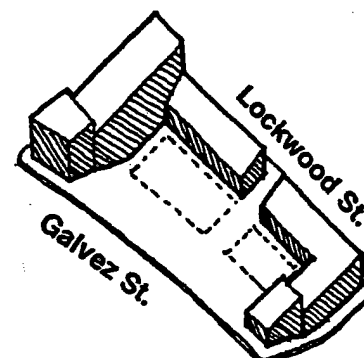
- Commercial use at ground floor and live/work upper units



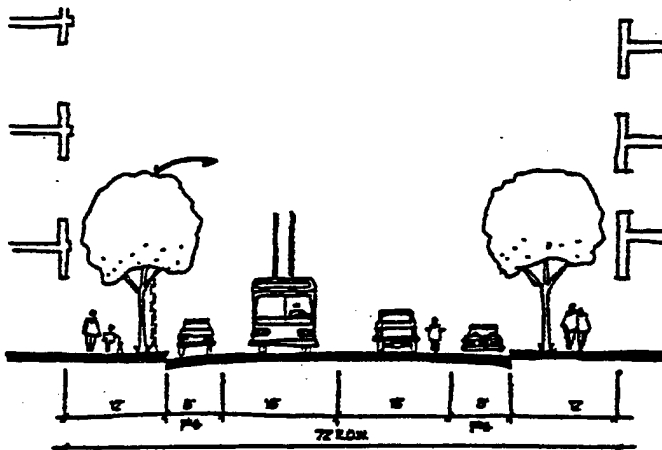
Single Owner Block



- Commercial use at ground floor and live/work upper units
- Building density concentration on Lockwood Street
- Open courtyard for outdoor art display



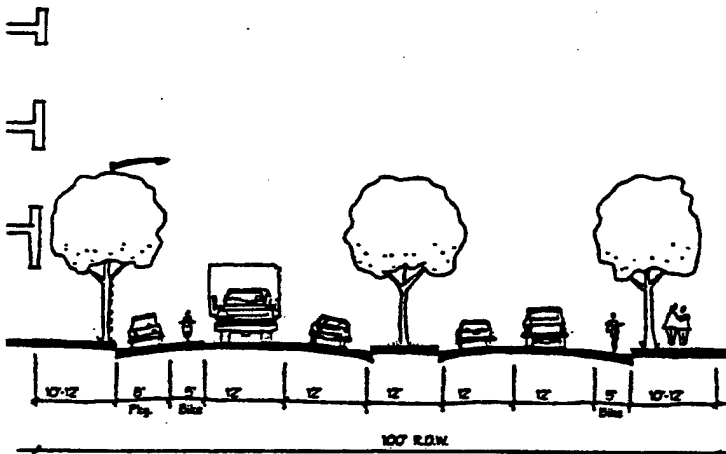
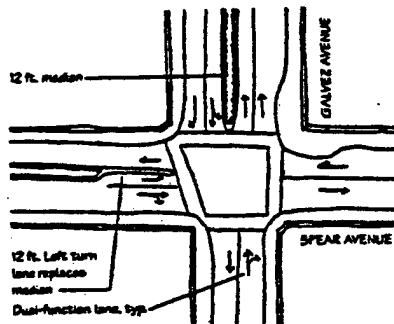
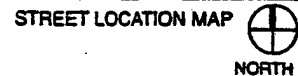
Lockwood Street



ILLUSTRATIVE SECTION

- ◆ Total right of way width of 72 ft
- ◆ Provide one moving lane each direction, 16 ft wide to provide manoeuvring space as necessary; vehicles, bus transit and bicycles all share use of the lane
- ◆ Provide one 8 ft wide parking lane each side of street, for primary use as short-term parking needs and secondary use for curbside loading
- ◆ Provide base sidewalk width of 12 ft, widened at locations specified
- ◆ Provide street trees every 25 ft
- ◆ Provide near-side bus stops every 800 - 1000 ft, with sidewalk bulbs 3 ft beyond normal curbline (15 ft wide total sidewalk), 40 ft in length behind crosswalk bar (or 60 feet for articulated coach vehicles)
- ◆ Provide sidewalk bulbing to the edge of the parking lane (20 ft total sidewalk width) at all other intersection locations to minimize pedestrian crossing distance and to provide for installation of pedestrian amenities; crosswalk bulbs should extend a minimum of 5 ft beyond the property line
- ◆ Provide mid-block sidewalk bulbing of 5 ft extra width and 15-20 ft in length for installation of sidewalk amenities. Mid-block bulbs on alternate sides of street block-by-block to discourage mid-block pedestrian crossing
- ◆ At bus stop locations, provide street striping to allow one through travel lane 12 ft wide adjacent to the 9 ft wide bus box, without any shift of centerline
- ◆ Curb cuts and vehicle access from Lockwood Street prohibited; access to collective parking and loading areas is from side and rear streets

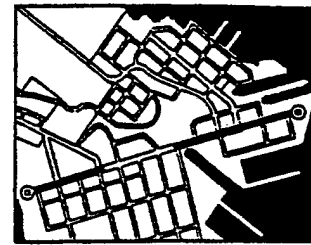
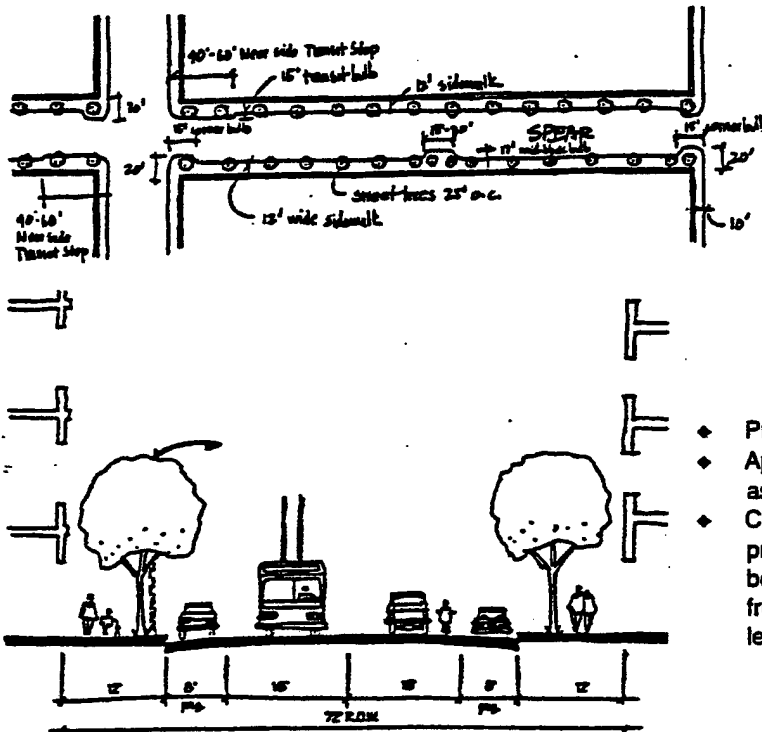
Galvez/Robinson Street (Gate to Spear Avenue)



- ◆ Provide right of way width of 100 ft
- ◆ Provide two continuous moving lanes each direction, 12 ft wide
- ◆ Provide 12 ft wide landscaped median (converts to provide a left turn lane at appropriate intersections)
- ◆ Provide parking lane on one side only (side of street may vary depending on type and intensity of both adjacent uses and level of pedestrian activity)
- ◆ Provide 5 ft wide Class II striped bicycle lane each side of street
- ◆ Provide sidewalks of between 10 - 12 ft (generally 12 ft in width adjacent to developed property, 10 feet in width adjacent to open space, but may vary depending on type and intensity of both adjacent uses and level of pedestrian activity), with bulbing at intersections and bus stops similar to those for Lockwood Street

STREET DESIGN GUIDELINES - Lockwood Landing

Spear Avenue (Robinson to east terminus & west terminus to Crisp)

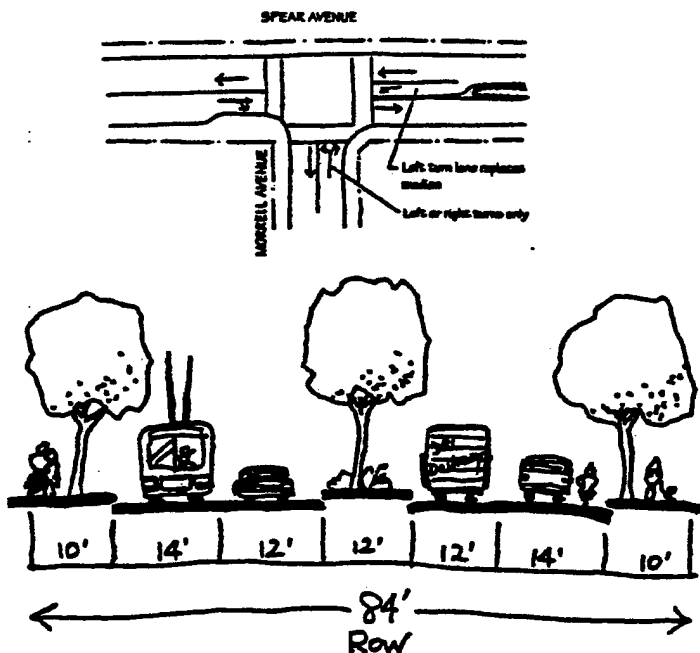


STREET LOCATION MAP
NORTH

ILLUSTRATIVE SECTION

- ◆ Provide right of way width of 72 ft
- ◆ Apply the same design standards as for Lockwood Street
- ◆ Curb cuts and vehicular access to property from Spear Avenue would be prohibited; access is assumed from side and rear streets to collective parking and loading areas

Spear Avenue (Morrell St. to Robinson St.)



ILLUSTRATIVE SECTION

- ◆ Provide right-of-way width of 84 ft
- ◆ Provide two continuous moving lanes in each direction
- ◆ Provide a 12 ft wide landscaped median which converts to exclusive left-turn lanes at Galvez/Robinson and Morrell Sts. Provide 10 ft wide sidewalks on each side; no bulbing at any location
- ◆ Curb-cuts and vehicular access to property from Spear Avenue would be prohibited; access is assumed from side and rear streets to collective parking and loading areas

Lockwood Landing Plaza

guidelines for public design, with potential for private participation

General Concepts

Lockwood Landing Plaza (the "Plaza"), contains approximately two and a half acres and represents the central focal point of the northern mixed use District, of the Project Area. Extending the daily activities of the site, this area can be programmed for daytime and evening uses serving employees and residents of the area, as well as the regional population drawn to attractive waterfront cultural and commercial activities. This Plaza is also one of the possible locations for a future ferry or water taxi landing at the Shipyard.

Public plazas, performance spaces, quiet waterfront promenades and commercial uses will share magnificent views of the Bay Bridge, East Bay and South Bay. The Plaza will wrap around the western end of historic Drydocks 3 and 2 and serve as a home to many uses. The Plaza will provide access to the historic structures that line the drydocks and will also serve as the southern gateway to the Lockwood Street mixed-use area.

The design of the Plaza can take advantage of its waterfront location by maintaining the drydocks and encouraging reuse of the historic structures. The Plaza is envisioned as having the most urban character of all of the open spaces in the Project Area (see "Lockwood Landing Plaza Design Concept ", Figure 18).

A Marketplace, at the foot of Lockwood Street, can serve as a gathering place with cafes, shops, and galleries spilling out onto the plaza area. The Plaza will also serve as a forecourt to the Lockwood Landing cultural area, a complex of performance, display and museum spaces. This is where large festivals, community events and outdoor performances can be held. A waterfront promenade and pedestrian bridge will ensure access to the water's edge. A bridge across Drydock 3 is planned as an extension of a pedestrian route to the south, providing a short cut to a possible future ferry and easing pedestrian circulation to restaurants, shops and public activities along the drydocks.

Design Guidelines

Character of the Park

- establish a common character for the Project Area - with an image of lively visual interest, flexible use, and respect for a remarkable urban waterfront setting.
- encourage the spontaneity of urban living, along with the potential to serve structured and orchestrated events.
- welcome the individual and the crowds, providing both the familiar and the serendipitous to a variety of users.
- make public art an integral part of the park design.
- provide a fully integrated design from overall concept through to detailing of park elements, resulting in a coherent whole.

Users

- daily users will include residents of the Project Area, workers from all parts of the site, students in educational programs, artists and artisans working on the site, and for many years, construction teams building the new facilities.
- special users will include, special events attendees, festivals and markets, outdoor performances, transient boaters who tie up at the Project Area for special events, users of the Bay Trail and outside visitors to on-site programs.
- children and elderly persons can also be expected in smaller numbers.

Uses

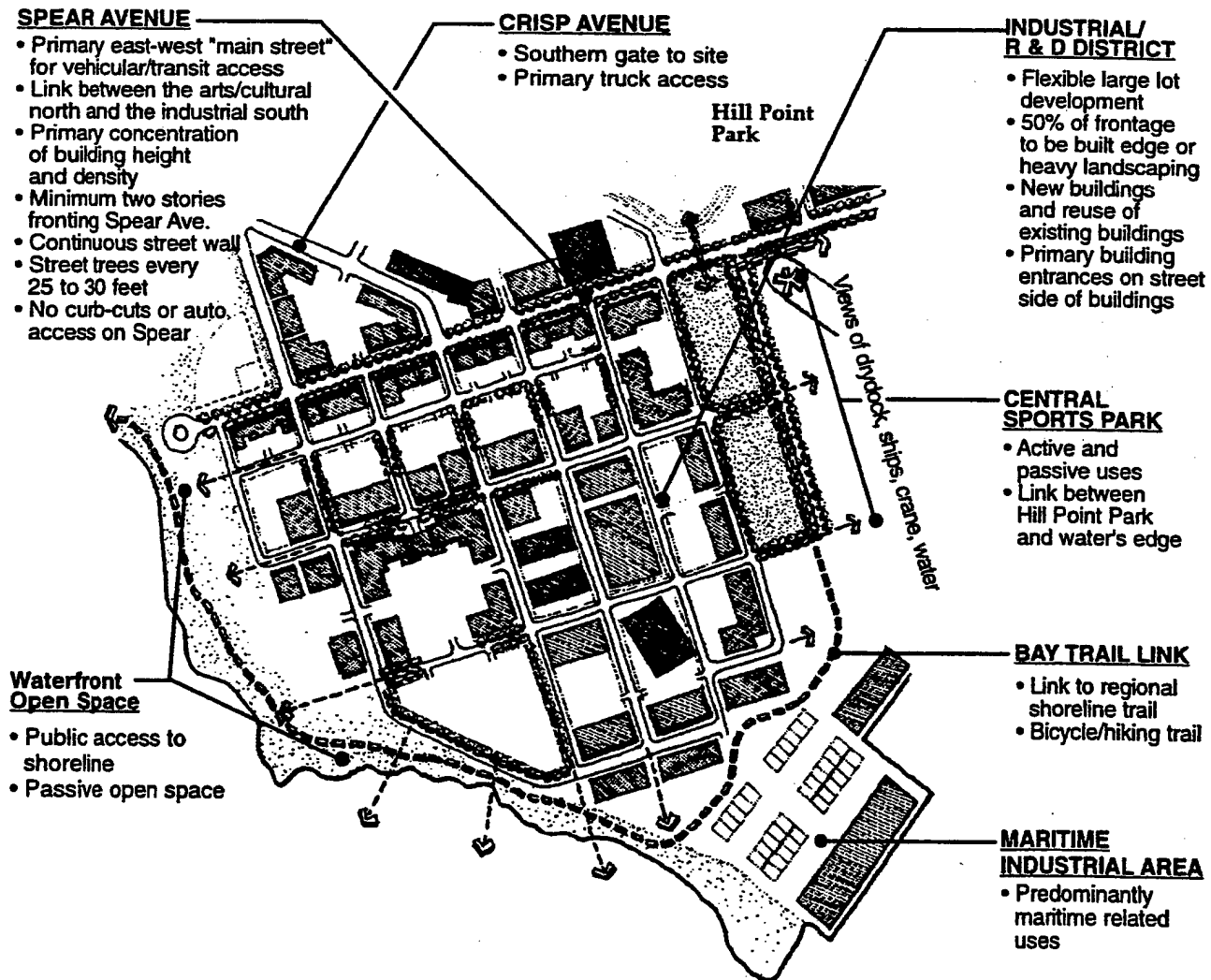
- include a marketplace, predominantly hardscaped and with potential for flexible arrangement of stalls.
- encourage shops and restaurants around the marketplace, allowing them to spill out onto the Plaza.
- locate the ferry/water taxi stop near the main plaza.
- provide for passive individual activities such as eating, reading, sunning and people-watching.
- design some park elements as objects of interest to children, but discourage playground equipment.
- provide for year-round food service on the Plaza, extending the hours of active use of the park, improving surveillance but avoiding a commercial character for the Plaza.
- other on-site services might include a small newspaper kiosk, and space for permanent or seasonal information exhibits.

Park Design

- consider a fountain or other three-dimensional element as a focal point for the space. Allow user interaction with the water, as appropriate, and easy access to the drydock and Bay edge.
- create an open space in front of a potential museum that is more passive and contemplative in character. Design a space that accommodates outdoor shows and relates to the museum and its activities; consider the inclusion of a performance area.
- create a promenade around the inner edge of Drydock 2 which is urban in character, with attractive paving, railings, benches and lighting standards.
- employ a variety of plant materials as space defining elements and as visual features of the site, complimentary to the primary industrial design elements that reflect the history of the site. Design a planting scheme to withstand potentially heavy use and effects of wind and salt-water. Consider planting as a symbolic element of the acquisition of the site and its clean-up for use by Bayview Hunters Point and the City as a whole.
- utilize design features to provide a variety of seating opportunities.
- consider a paving pattern to guide Plaza use, add visual interest and sustain heavy use and reasonable maintenance expectations.

In this District, as in other parts of the Project Area, artists and artisans will be encouraged to work in the area and to contribute toward the physical character of the buildings, open spaces and signage.

The "Industrial and Research & Development District" (see Figure 19) shown here illustrates, a general pattern of blocks and lots, roadway layout, park location, and new and existing buildings which is one among many patterns which could result from development of this area. At the conclusion of this Industrial/R&D District section, sketches of development sites are provided to illustrate the variety and flexibility of the guidelines in this area.



Hunters Point Shipyard
Figure 19

AREA #3: INDUSTRIAL/R & D URBAN DESIGN CONCEPT

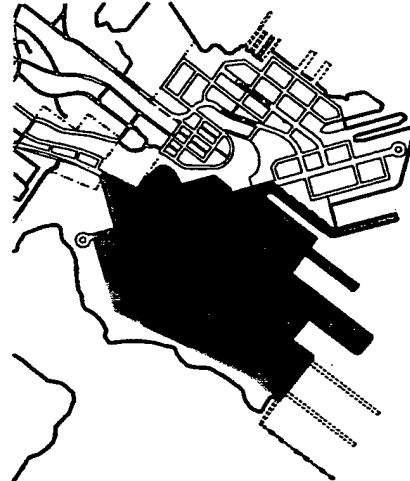
**AREA #3:
INDUSTRIAL/
RESEARCH &
DEVELOPMENT
DISTRICT**

Industrial/R & D District

Key Map

General Concepts

The Industrial/R & D District (the "District") in the southern part of the Project Area, will provide sites for light industrial and maritime industrial users with varying needs for site layout, access and building configuration. The District is divided into two distinct areas. The first includes parcels lining Spear and Crisp Avenues, completing the "main street" loop from north to south gates to the site. These parcels will accommodate research & development, industry, mixed use, a training center and a Sports Park with grand views to the water and maritime areas. Here, a pedestrian/transit street character is being sought and higher density uses will be encouraged. The remainder of the District constitutes the second area, distinguished by its flexibility in the scale and location of buildings.

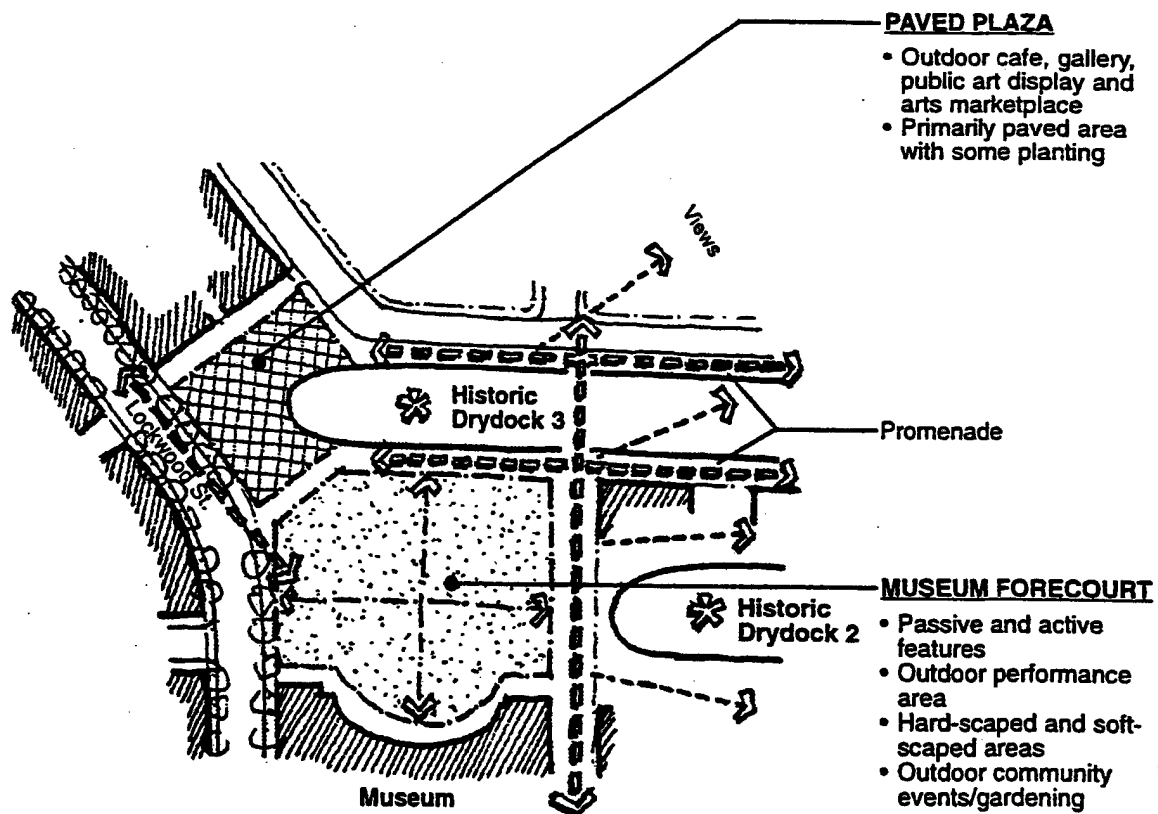


An address on Spear Avenue will, in the future, suggest a District of successful, sizable businesses with the most intensive development of commercial/research & development activity in the Project Area. Translated into design characteristics, this will mean front doors and distinctive signage along Spear announcing this business activity, which will be reinforced by a strong built edge and landscaping. Uses with the potential for multi-story buildings, two to six stories, will be encouraged here, and transit services will concentrate pedestrian activity in areas of local-serving retail and business services which also serve to enliven the pedestrian experience.

The remainder of this Industrial/R&D District south of Spear Avenue and south of Drydock 4 is proposed for large lot and low-rise development. The southeastern portion of the District will include an area reserved for Maritime Industrial uses. This portion should be of very little physical difference from the balance of the Industrial/R & D District. The only exception will be that the land uses are proposed to be marine in orientation and function. Businesses are encouraged to build new structures and/or reuse existing structures, and consideration of flexibility and growth potential in site and building design will be encouraged. Efficient truck access to loading areas will be facilitated, and potential conflicts with other uses minimized. Design requirements will focus on a few unifying features for the area, including buildings and landscape that reinforce street patterns and encourage creative reuse of existing structures where feasible.

- ★ Items identified with a star shaped bullet are Development Standards and therefore have greater status in the design process.

- incorporate appropriate forms of public art - providing visual interest and delight, serving to orient users and when integrated with functional elements like seating or lighting to raise the overall quality of the Plaza experience.
- provide warm and inviting lighting, extending the use of the Plaza after daylight hours. Provide lighting sufficient for safety and comfort without negative effects.
- incorporate signage into the Plaza design, and consider opportunities for featuring activities in all areas of the Shipyard.
- provide for general ease of maintenance and security, storage, power and water.



Hunters Point Shipyard
Figure 18

LOCKWOOD LANDING PLAZA DESIGN CONCEPT

Density

Densities in the district range from .5 to 2.0 Floor Area Ratio (FAR) with the highest density along Spear and Crisp Avenues. In addition to the FAR on a site, the Development Standards allow for live/work units in this District (excluding the industrial area) which are not included in the FAR. Residential use at a density of one unit for every 800 square feet of site area is also allowed on mixed-use parcels north of Spear Avenue.

Spear Avenue Corridor

- locate multi-story buildings along Spear Avenue, encouraging a concentration of densities on the Spear frontage.
- concentrate densities at the west end of Spear Avenue, forming a gateway to the district.

General Industrial District

- to the extent feasible, provide density bonuses for structured parking off-site, and FAR exemptions for structured parking provided on-site.

Use

A wide variety of employment generating uses are allowed in this district (see Redevelopment Plan for a list of targeted uses). All arts-related uses which are compatible with the primary use should be permitted in this district.

Heights

Maximum heights in this district range from 32 feet to 60 feet (see Development Standards).

Spear Avenue Corridor

- encourage varied heights along Spear Avenue, with multi-story users encouraged to locate in that area.
- establish Crisp as major entry roadway.
- ★ provide a minimum two stories fronting Spear Avenue.

General Industrial District

- encourage higher portions of structures throughout the district to be located at the street edge.

Lots & Frontage

Spear Avenue Corridor

- establish a pattern of development that either utilizes a standard lot width of 50 feet, or reflects a design change every 50 feet, along Spear Avenue.
- ★ establish a continuous street wall on Spear Avenue by discouraging building setbacks, providing for exceptions only of 50 feet or less where an intensive landscaped edge can establish a similar presence.
- ★ avoid curb cuts on Spear Avenue; access parking and goods handling from alleys and side streets only.

-
- ✧ provide interest at a pedestrian scale by providing building variety at a maximum 50 foot interval, at which point the use must change or a significant modification in design (e.g. changes in materials, window design, colors or wall profiles as well as introduction of entries, or the utilization of environmental art) should occur.

General Industrial District

- design 50 percent of street frontage to be a built edge or heavy landscaping.
- vary materials and building articulation between ground and upper stories.
- maintain variety and interest with a modification in design at intervals of 100 feet (e.g. changes in materials, window design, colors or wall profiles as well as introduction of entries, or the utilization of environmental art).
- ✧ locate primary building entrances on the street side of buildings, with secondary entrances oriented to parking areas.

Street Design

- it is critical to provide convenient vehicle access in this area.
- ensure safe and convenient pedestrian movement along the streets and alleys, especially along Spear and Crisp Avenues, where most of the employment and visitor trips made on transit will originate.
- design buildings to incorporate sound insulation, ventilation systems, and other structural features to minimize the effects of traffic noise, pollution, and vibration, as this is an area where higher levels of large-vehicle traffic are anticipated.

Architecture

Spear Avenue Corridor

- ✧ modulate building massing at a maximum of 50 foot intervals.
- provide street-level windows, displays, or signs which allow pedestrians to understand the operations and products for all buildings.
- avoid blank walls facing Spear Avenue and encourage a minimum 50 percent of block length to be transparent.
- provide visual variety between adjacent buildings with distinct design, materials, and colors, while maintaining complementary features.
- ✧ encourage screening of unsightly roof mechanical equipment or cluster these elements so as to minimize their visual impact.
- provide pedestrian-scaled elements on ground floor facade (base/bridge, entries, window details, awnings).
- encourage landscaping along sidewalks on Spear Avenue.
- ✧ provide street trees at regular intervals.

General Industrial District

- blank walls visible from public streets should be detailed, textured, or modulated.

Signs

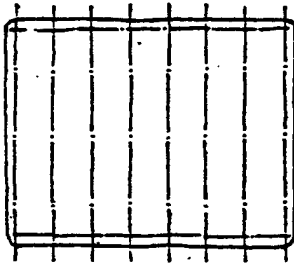
Create signage or a signage program including the following:

- design and construct signs to be complementary elements in the total environment.
- design signs that are of the size, shape, material, color, type of construction, lighting, and location to be in scale with and harmonious with development on the site and on adjacent sites in the District.
- reflect the arts and industry theme for the Shipyard in the design and materials selection for signs.
- identify only the user and/or use of the particular property or portion thereof on each sign.
- ⊕ do not permit blinking, flashing, moving, or rotating signs.
- discourage roof signs or signs projecting above the parapet of any building.
- ⊕ permit a maximum area of signage of a total of two square feet per linear foot of frontage.
- distinguish mixed use and residential areas by allowing no signs above the first floor.
- consider and encourage exceptions to the above for special features, lighting, and signage at gateways and for important buildings or use areas.

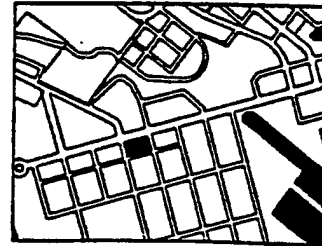
ILLUSTRATIVE EXAMPLES - Industry/R&D*

Block 31

Spear Avenue



- Build to lot line on Spear Avenue
- 50% of frontage on side streets to be built edge or heavy planting
- 50' standard lot width, typical



LOCATION MAP

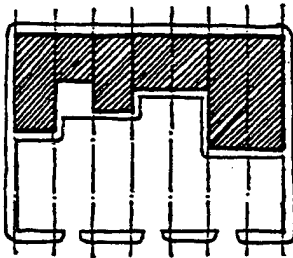


Building Placement

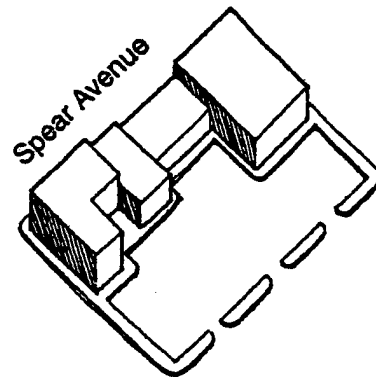
Building Massing

Multiple owner

Spear Avenue

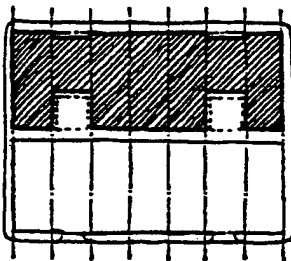


- 50' maximum height limit
- Modulate building massing at 25'-50' intervals
- Service and parking access from back street

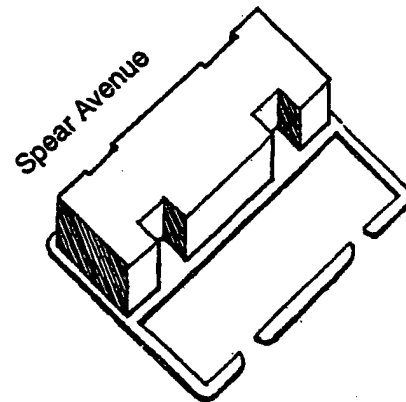


Single Owner

Spear Avenue

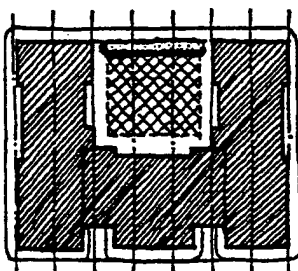


- Building density and height concentrated on Spear Avenue
- Service and parking access from back street



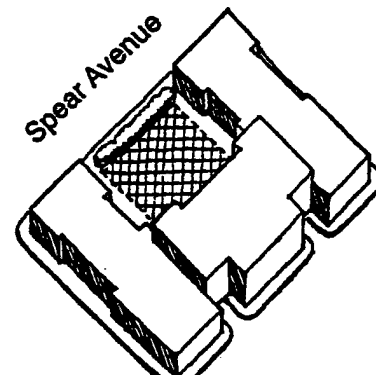
Single Owner With FAR Bonus

Spear Avenue



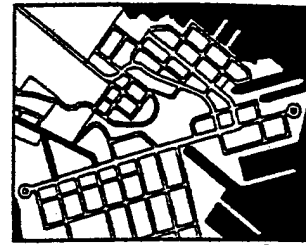
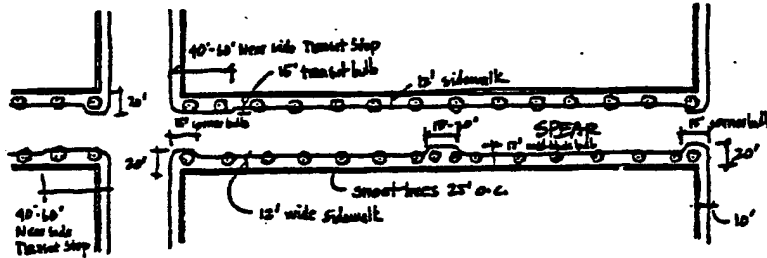
Lockwood St.

- Increased FAR bonus for structured parking
- Modulate building massing at 25'-50' intervals
- Vary materials and building articulation between ground and upper floors

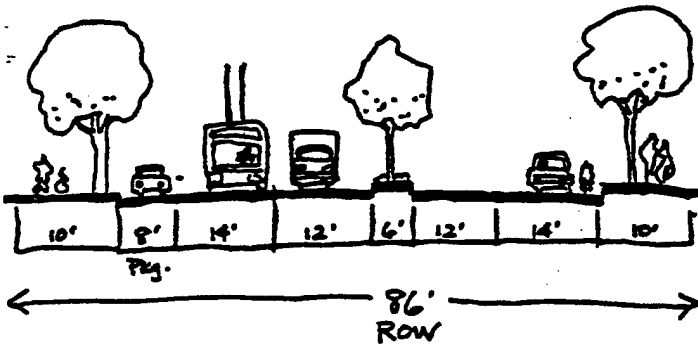


STREET DESIGN GUIDELINES - Industry/R & D

Crisp Street (Gate to Spear Ave.)



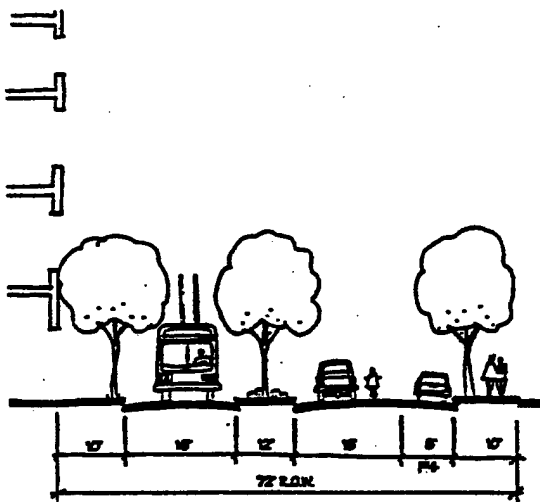
STREET LOCATION MAP
NORTH



- ◆ Provide right of way width of 86 ft.
- ◆ Provide two travel lanes in each direction; provide parking on one side only (generally adjacent to developed uses), and a 6 ft wide center landscaped median
- ◆ Close to Spear Avenue, curbside parking lane and center median would be replaced with left-turn pocket.

ILLUSTRATIVE SECTION

"I" Street (from Crisp St. to Spear Ave)

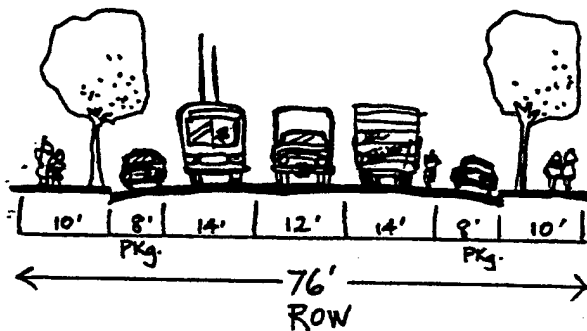


- ◆ Provide right of way width of 72 ft
- ◆ On "I" Street, from Crisp Street to Spear Street, provide one travel lane in each direction 16 ft in width, sidewalks both sides 10 ft in width, parking on one side only (generally adjacent to developed uses and/or active open space), and a center landscaped median 12 ft wide
- ◆ The center median could be replaced with wider sidewalks and 8 ft parking lanes on both sides of the street (same design character as for Lockwood)

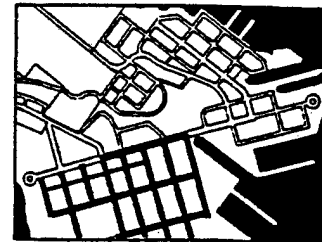
ILLUSTRATIVE SECTION

STREET DESIGN GUIDELINES - Industry/R & D

Spear Avenue (Crisp to Morrell St.)



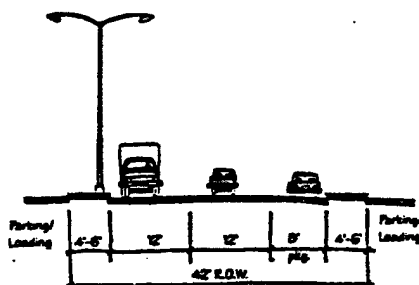
ILLUSTRATIVE SECTION



STREET LOCATION MAP
NORTH

- ◆ Provide right-of-way width of 76 ft.
- ◆ Provide one 14 ft wide continuous moving lane in each direction; parking lanes on both sides
- ◆ Provide one dedicated 12 ft wide left-turn lane in center of roadway
- ◆ Design guidelines same as for Lockwood Street
- ◆ No curbside parking along Sports Park; widen sidewalk into parking lanes on both sides of the street

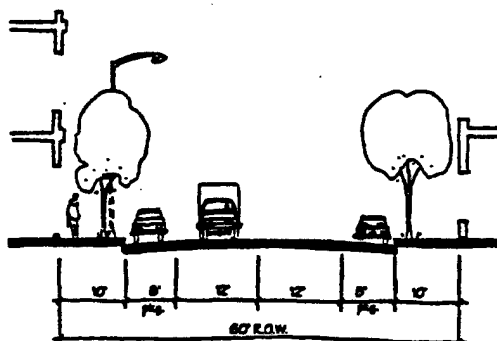
South of Spear Alleys



ILLUSTRATIVE SECTION

- ◆ Total right-of-way width of 42 ft
- ◆ Two travel lanes each and 12 ft in width
- ◆ One 8 ft wide curbside parking lane
- ◆ Two 4 ft sidewalks, entirely unobstructed to meet ADA standards and widened to 6 ft; sidewalk bulbs to accommodate required street signs and lights, and staggered to allow a minimum 22 ft total travel lane width at all times
- ◆ Curb cuts throughout to provide access to rear parking areas, loading

Truck Route (Collector Street)



ILLUSTRATIVE SECTION

- ◆ Total right of way width of 60 ft
- ◆ Two travel lanes of 12 ft each
- ◆ Two 10 ft sidewalks
- ◆ Two 8 ft curb (parking) lanes
- ◆ Street trees planted approximately every 25 ft, exceptions for curb cuts

Central Sports Park

guidelines for public design, with potential for private participation

General Concepts

"Central Sports Park," (Figure 23) a major sports and recreation facility, is planned in the southeast portion of the Project Area. This park will physically link the Hill Point Park at the south end of Hunters Point Hill with the waterfront at the southern tip of the site. Neighboring uses are the education/cultural center and industrial uses to the west, and maritime uses on the east side. A second active open space is proposed for the western end of Spear Avenue. Baseball diamonds, soccer fields, basketball courts, and tennis courts are examples of sports facilities that would provide recreational opportunities not only for residents of the Shipyard and employees of the adjacent industrial and research and development firms, but also for students at the job training center, employees of Shipyard businesses in the northern sector, and the nearby Bayview Hunters Point neighborhood. In addition, the facilities will also serve the citywide demand for playing fields. The objective is to develop active recreation facilities that serve the Hunters Point community as well as satisfy citywide demand.

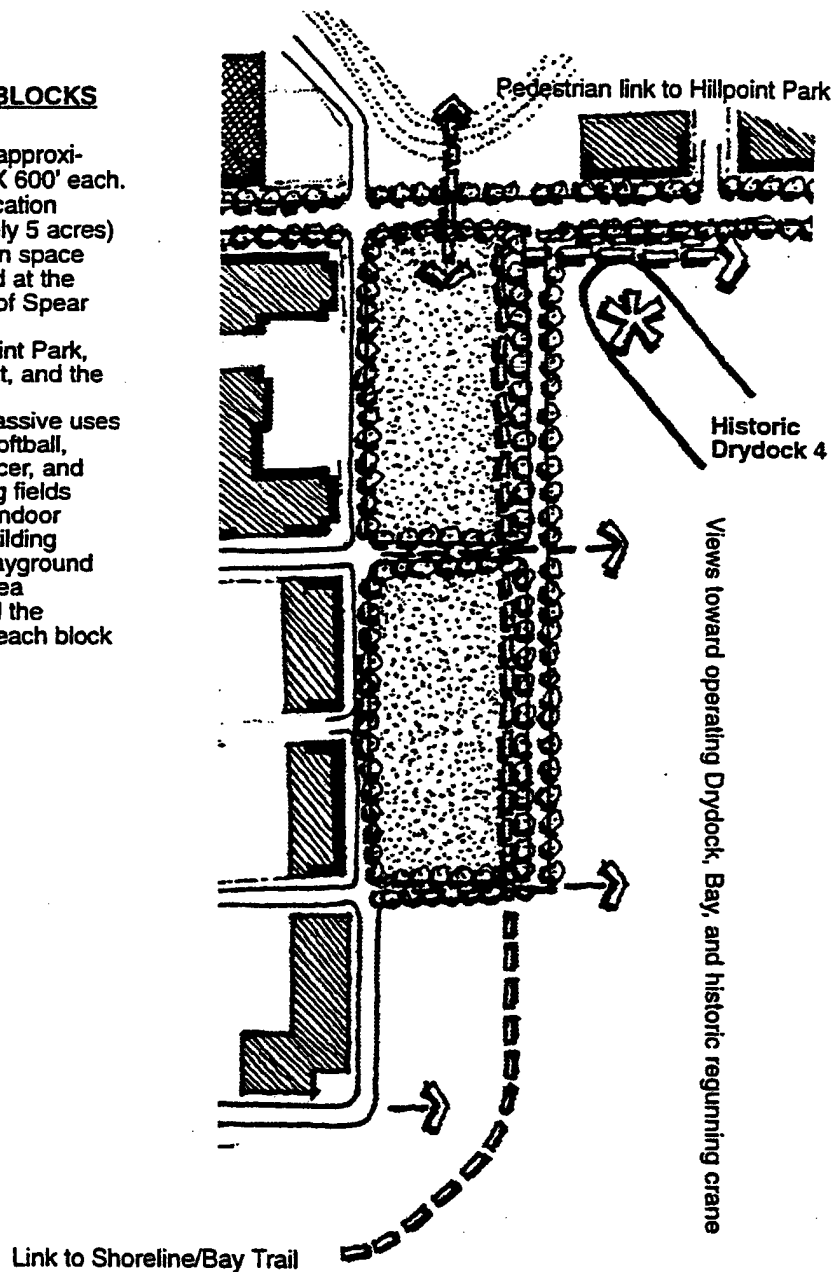
Design Guidelines

The active recreation facilities will occupy two city blocks aligned along the eastern edge of the District, so that a continuous view corridor to the water may be maintained. An additional location for such a use is also provided at the western end of Spear Avenue. Parking should be arranged along the streets, and night lighting be provided.

- provide standard tennis courts.
- provide full-size basketball courts.
- create two or three combination little league/softball diamonds, with concrete pads for bleachers.
- consider creating a hardball diamond with cinder infield and concrete pad for bleachers.
- provide two practice soccer fields or one regulation size soccer field.
- consider a softly sculpted lawn area for passive recreation with trees and shrubs to serve as wind barriers and to create shading.
- provide rest rooms.
- place drinking fountains on the site.
- consider and reserve a site for a recreation building which will accommodate a full basketball court, exercise room, office for a recreation director and rest rooms.
- provide children's playground and picnic area next to recreation building.
- plant trees around the perimeter and use planting to provide spatial definition and wind protection.
- create linkages to the waterfront, where safe and appropriate - consider tower structure for viewing the working waterfront.
- reinforce visibility of Sports Park on Spear Avenue.
- design for ease of maintenance and operation.

SPORTS PARK BLOCKS

- Two blocks, approximately 350' X 600' each. Additional location (approximately 5 acres) of active open space also reserved at the eastern end of Spear Avenue
- Link to Hillpoint Park, the waterfront, and the Bay Trail
- Active and passive uses
- Basketball, softball, hardball, soccer, and tennis playing fields
- Location for indoor recreation building
- Children's playground and picnic area
- Trees around the perimeter of each block



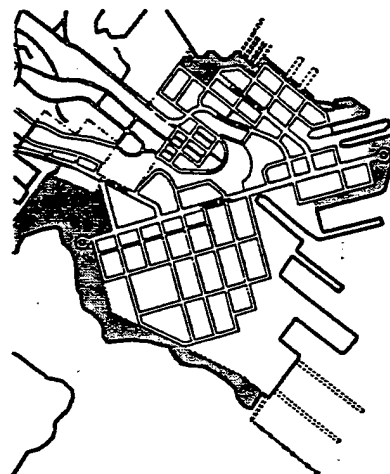
**AREA #4:
WATERFRONT
OPEN SPACE**

Waterfront Open Space

Key Map

General Concepts

Hunters Point Shipyard, oriented toward San Francisco Bay, occupies a significant portion of San Francisco's southern waterfront. The Shipyard overlooks Candlestick Park and the San Bruno hills to the southwest, the East Bay waterfront and distant hills to the east, the Bay Bridge and Yerba Buena Island to the northeast, downtown San Francisco to the north, and the industrial India Basin to the northwest. These waterfront aspects represent tremendous recreational and aesthetic amenities that the development of Hunters Point Shipyard will further enhance. The objective is to maintain and enhance significant segments of the Hunters Point Shipyard shoreline for public access and recreation (Waterfront Open Space Urban Design Concept", Figure 24).



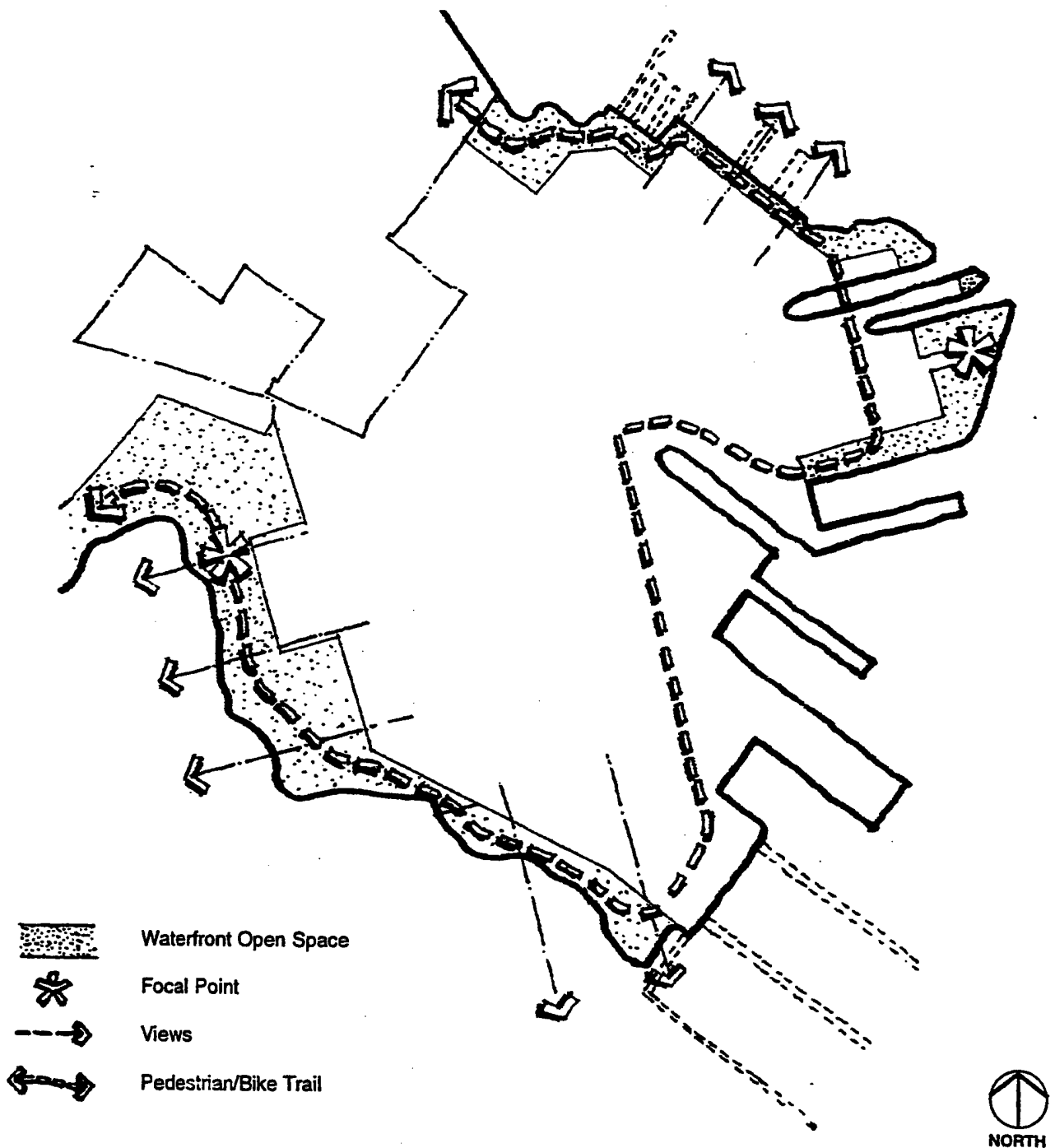
Recreational walkers and bicyclists will be accommodated on an extension of the Bay Trail located in an open space corridor along much of the Shipyard's shoreline. This corridor should feature areas of meadow and natural plants, boat and fishing piers, viewing platforms, conveniently located benches and parking areas at the "trailheads". It should provide the opportunity for linkages with the regional Bay Trail alignments to the north and the south. Wetland restoration should be encouraged.

The northeastern waterfront open space adjacent to the mixed use and educational/cultural/historical districts will have a more urban character. These waterfront promenades provide linkage to Lockwood Street and spectacular views of San Francisco Bay, including downtown San Francisco, the Bay Bridge and Yerba Buena Island, the waterfront and distant hills of the East Bay.

Design Guidelines

- provide opportunities for maximum public access and use of the waterfront.
- provide a corridor for the Bay Trail (hiking and bicycle access) close to the Bay Shoreline, and linking up with the regional Bay Trail alignments to the north (India Basin), and south (South Basin and Candlestick Point State Recreation Area).
- feature the regunning crane as a significant, long-term part of the open space experience of the site, as a unique landmark, and for the interpretive materials which can be developed to tell the story of the history of the Shipyard.
- restore shoreline areas to wetlands or native habitats where appropriate.

- consider the development of a small boat harbor/marina, with the potential for future ferry and water taxi service linking the Shipyard with other shoreline areas in the City and the Bay Area.



Hunters Point Shipyard
Figure 24

AREA #4: WATERFRONT OPEN SPACE URBAN DESIGN CONCEPT

VI. DESIGN REVIEW PROCEDURE

Design advice and guidance will be made available to developers as part of the design review process. This review will serve to coordinate individual efforts and realize the best possibilities inherent in each project. Better architecture, site planning and engineering are the most obvious results of these procedures; but benefits also accrue in overall visual harmony and in achieving the broad functional objectives of the design.

New proposals will undergo design review and approval by the Agency prior to and subsequent to the conveyance of title by deed. This review will assure compliance with the requirements of the Redevelopment Plan and will evaluate the quality and appropriateness of the proposal on the basis of the design objectives, standards and urban design guidelines stated herein.

Staff Participation

Design review will be conducted by the Agency and its staff or, at the discretion of the Agency, a qualified independent individual or review panel may be selected to make design evaluations and recommendations to the Agency. The staff member responsible for the design review and maintaining liaison with the developer's architect will be the Agency's Chief, Architecture or a designated alternate. Formal required submissions shall be made to the Agency through the Agency's Chief, Architecture.

It is expected that continuous contact will be maintained between the developer's architect and the Agency architectural and engineering staff during the design and working drawing process and that reasonable requests for progress prints in addition to those required below will be met at any time.

Design for new development will be reviewed by the Agency's Chief, Architecture or his or her designee. This review will occur before critical decisions in the design process are made and will include review of the basic design concept, schematic plans, preliminary plans and outline specifications, and final plans and specifications as described below.

Design for new development will also be reviewed by the Department of City Planning as mutually agreed upon between the Agency and the Department. Such review shall be completed within reasonable amount of time as deemed necessary depending on the complexity of the proposed development. In the event of a disagreement between the Director of City Planning and the Executive Director of the Redevelopment Agency regarding design, the matter is to be resolved by the Redevelopment Agency Commission.

Citizen Participation

Advice and consultation will be sought by Agency staff from the Hunters Point Shipyard Citizens Advisory Committee (CAC) established by and pursuant to San Francisco Redevelopment Agency Resolution No. _____, regarding proposed development.

Conformity to the General Plan, Codes, and Ordinances

All new development shall meet the requirements of the General Plan and applicable codes including changes or amendments thereto as may be made subsequent to the adoption of the Redevelopment Plan except to the extent that the changes and amendments conflict with the express provisions of the Redevelopment Plan and this Design for Development.

Acceptance of Proposals

Required design submissions will occur at four stages in the preparation of the new development proposal. Additional informal reviews at the request of either the developer or the Agency staff are encouraged. A time schedule for the required submissions will be agreed upon at or before the time of execution of the Disposition and Development Agreement and will be set forth therein or in a separate document. A time period for review will also be established. It is the intention of the Agency that once acceptance has been granted at submission stage, further review will be limited to the development or refinement of previously accepted submissions or to the review of new elements which were not present in previous submissions.

In evaluating the design of a building and its relationship to the site and adjoining areas, the Agency will avoid imposing arbitrary conditions and requirements. The Agency will reject designs which fail to conform with the Redevelopment Plan, or the Design for Development. The Agency will attempt to work closely with the developer and the developer's architect in resolving problems, but the Agency's ultimate approval or rejection shall be final.

In the disposition of land, the Agency may establish additional design criteria for specific parcels to insure an attractive and harmonious urban design and may implement these criteria with appropriate provisions in the disposition documents.

The Design Objectives and Urban Design Objectives contained in this document are intended to inform individual project design and would be used to measure the design compatibility of a project with the overall design character of the Shipyard. Development Standards within this document shall be applied by the Agency to Project proposals in order to achieve the purposes of the Redevelopment Plan for this Project Area, provided, however that with respect to the Development Standards the Agency may, in its discretion, grant minor variances to such Standards where, owing to unusual and special conditions, the enforcement of the Development Standards would result in undue hardships, or would constitute an unreasonable limitation beyond the intent and purpose of such standards, subject to the condition that the Agency shall find and determine that such minor variances result in substantial compliance with the intent and purpose of these Standards.

Submission Requirements

Formal submissions of plans shall occur in four stages as follows:

1. Basic Design Concept

- a. Site Plan showing general relationships of buildings, landscaped areas, parking areas, loading areas, roads and sidewalks. The building plan(s) shall distinguish between residential area, commercial area, office area, manufacturing area, storage area, etc. Adjacent existing and proposed roads and structures shall be shown. Phasing possibilities, if any shall be shown.
- b. Site Sections showing height relationships in addition to those shown above.
- c. Building Plans, Elevations and Sections sufficient to indicate the architectural design, and materials proposed.
- d. Perspective sketches and/or model showing the architectural character of the proposed design concept.

2. Schematic

- a. Site Plan showing general relationships of buildings, landscaped areas, parking areas, loading areas, roads and sidewalks. The building plan(s) shall distinguish between residential area, commercial area, office area, manufacturing area, storage area, etc. Adjacent existing and proposed roads and structures shall be shown. Phasing possibilities, if any, shall be shown.
- b. Site Sections showing height relationships, in addition to those shown above.
- c. Building Plans, Elevations and Sections sufficient to indicate the architectural design, structural system, and materials proposed.
- d. Written statement of proposal including: number of parking spaces, size and use of the facilities provided, structural system, and principal building materials.
- e. If required by the Agency, perspective sketches (at eye level) and/or model showing the architectural design of the proposed development.

3. Preliminary Plans and Outline Specifications

Upon approval by the Agency of the Schematic Plans, the following submissions are required:

- a. Site Plan or Plans showing: building(s), landscaped areas, parking areas, loading areas, roads and sidewalks. All land use shall be designated. All landscaping and site development details, including walls, fences, planting, outdoor lighting, street furniture, and ground surface materials, shall be indicated. Streets and points of vehicular and pedestrian access shall be shown, indicating proposed new paving, planting and lighting by the City.

All utilities, easements or service facilities, insofar as they relate to work by the City or by "others", shall be shown.

Those areas of the site proposed to be developed "by other" or easements to be provided for others shall be clearly indicated.

In addition, Site Plans shall indicate (1) existing and finish contours; (2) site drainage and roof drainage; (3) an acceptable transition of overhead utilities to underground system within the site; (4) the required connections to existing utilities; (5) the utilization of public utility easements relative to electric, gas, telephone and water requirements of buildings within the site; (6) the planned use or modification of existing public right of way improvements; and (7) all existing structures around the site.

- b. All building Plans and Elevations at a sufficiently large scale.
- c. Building Sections showing all typical cross sections.
- d. All sign locations, design, and sizes.
- e. Materials and colors sample board.
- f. Drawings showing the structural, mechanical and electrical systems.
- g. Outline Specifications for materials and methods of construction.
- h. Expanded statement of proposal 2-d above to include the major building dimensions and gross floor area of buildings.
- i. Where variances, waivers, or deviations from existing City, State, or Federal regulations are proposed, they shall be listed and progress toward obtaining such variances shall be stated.

4. *Final Plan and Specifications*

Upon acceptance by the Agency of the Preliminary Plans and Outline Specifications, the following submissions will be required:

- a. Completed Working Drawings and Specifications ready for bidding.
- b. Complete presentation of all exterior color and material schedules including samples, if different from those submitted for the Preliminary Plans.
- c. Complete design drawings for all exterior signs and graphics.

Issuance of Building Permits

The final construction documents shall conform to the final plans and specifications accepted by the Agency and to all applicable codes and ordinances of the City and County of San Francisco and the State of California at the time a building permit is filed with the City.

To obtain the necessary building permits, final plans and specifications shall be submitted directly to the Central Permit Bureau of the City and County of San Francisco.

Upon completion of its review, the Central Permit Bureau will forward the submitted final plans and specifications to the Agency for a confirmation of their adherence to the Agency-accepted final plans and specifications. Upon confirmation by the Agency, the

final plans and specifications will be approved by the Agency and returned to the Central Permit Bureau for issuance of the Building Permit directly to the owner.

Once construction is started, the only items subject to an additional review would be requests for change orders in the construction. The developer is strictly required to construct the Project in accordance with all approved final plans and specifications. Permission to make changes from such approved documents must be solicited by the developer, in writing, to the Chief, Architecture or his or her designee, who in turn will reply in writing giving an acceptance or rejection of the changes. No changes in the work are to be undertaken until such acceptance has been obtained.

Disclaimer Clause

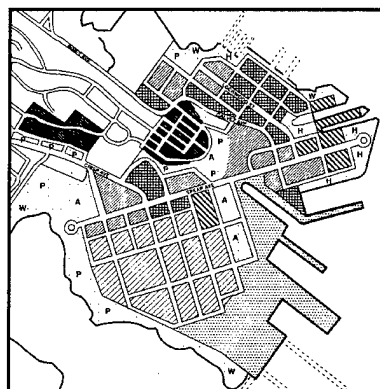
The Agency's review and acceptance shall be of a general nature only for apparent compliance with the requirements of the Redevelopment Plan and the Design for Development. It shall not be a detailed check of codes dimensions, materials, design and construction processes. It shall not relieve the developer, contractor, vendor, etc., from complying with all aspects of the applicable Federal, State, and Local codes and utility company requirements. The Agency shall not be held responsible or liable for any errors or omissions or failure or performance of the work constructed or incorporated in the construction by reason of this review.

VII. PROCEDURE FOR AMENDMENT

If and when it becomes necessary and appropriate to amend this document, said amendment(s) shall be approved by both the San Francisco City Planning Commission and the San Francisco Redevelopment Agency Commission.

Appendix E

Community History



APPENDIX E: COMMUNITY HISTORY

HUNTERS POINT SHIPYARD
A COMMUNITY HISTORY

FEBRUARY 1996

Purpose and Scope of Community History

This study chronicles the social and cultural development of the Bayview-Hunters Point District of the City of San Francisco from the 1940s to the present. Situated on a series of hills in the southeastern corner of the city, Bayview-Hunters Point is one of the most scenic sections of the San Francisco peninsula. This report explores the historical processes that have shaped this community, from turn-of-the-century fishing and maritime settlements, to the rise of the Naval Shipyard in the 1940s, through closure of the shipyard in 1974 and its aftermath.

Highlighted in this study is the reciprocal relationship between the district and the United States Naval Shipyard within its borders. The focus of this five and a half decades of history is on the enormous growth and change that occurred during the heyday of Hunters Point Naval Shipyard, from the 1940s through the 1970s, and on the linked destinies of the shipyard and the Hunters Point population. This study charts the rise and fall of the shipyard, consistently an essential fixture in the community's economy and development.

The story of Hunters Point is told through the voices – the living memory - of its residents, those who lived in the community during the critical period and whose lives were closely tied to the historical development of the district. Interviewees are referenced by name in the text and are fully identified in the appendix. These primary sources, oral interviews conducted in 1995, are complemented by background archival, documentary, demographic, and historical research, which puts the accounts of individual men and women in the social and political context of the times they witnessed.

The report is organized chronologically. The first section provides a broad historical context, from the earliest European and Chinese settlements through the pre-1941 prelude to development. Next, the study closely examines Hunters Point's critical wartime expansion and dramatic demographic shifts. Several periods of postwar transformation are then explored, including an investigation of the shipyard's decline and the accompanying decline in the quality of economic life for the Hunters Point community. The concluding sections detail the community's emerging responses to these issues. The study concludes with an examination of the current status of the district as a community without a shipyard, with high unemployment and multifaceted community efforts designed to cure its social and economic problems.

One purpose of this document is the preservation of a cultural record which may survive time and change. In examining the history of the

Hunters Point region, it is important to keep in mind the diversity and resilience of the community. To survive the past half-century, the residents of Hunters Point have had to face many challenges.

For simplicity, the region being discussed is referred to herein as Hunters Point. This name refers to the entire Bayview-Hunters Point District denoted by census tracts 230, 231, 232, 233, 234, 606, 608, and 609, or simply zip code 94124.

The Early Years

Until the rise of its maritime trade, the sparsely populated area of Hunters Point attracted scattered settlements of Europeans, mostly Maltese and Italian, who gathered along the bay in fishing communities in the eighteenth and nineteenth centuries. Chinese shrimp camps began to form as early as 1871. By the 1930s twelve shrimp camps dotted the bay. It was then common to see along what is now Hunters Point boats, junks, nets, large kettles for boiling shrimp, baskets for hauling, and the catch drying on sloping piers.

The Chinese shrimping industry continued until the end of the 1940s, when a combination of discriminatory legislation, bay fill, diversion of water to Los Angeles, real estate speculation, and pollution led to the decline of many Chinese-owned fishing businesses in South Bayshore. The latest known Chinese shrimp industry is the Hunters Point Shrimp Company, which opened in 1946, closed in 1960, and was located in the South Bayshore area outside the project site.

The golden age of the American merchant marine in the 1850s witnessed the maritime development of the long Hunters Point promontory extending 6,000 feet into the deep waters of the south San Francisco Bay. This serpentine point, 2,000 feet wide and 290 feet high, soon became the site for a thriving shipbuilding trade at the graved dry dock of the California Dry Dock Company. A new dry dock, completed in 1903, was the largest then in existence on the West Coast. Boasting shipwrights and boatwrights of outstanding skill, the Hunters Point maritime industry flourished.

Early residences developed slowly as the local economies emerged. By the 1930s, Hunters Point had more than a hundred homes, along with restaurants, saloons, lodging houses, and farms -- to accommodate as many as a few thousand residents. Bethlehem Steel's development of the shipyard added economic opportunity to the scenic attraction of the area. With this improved economic base, a steady supply of residents began to call the district home.

Prelude to Development

By the 1930s, San Francisco recognized Hunters Point as a separate district, yet in many regards overlooked it. It was geographically separated from the rest of the peninsula by its hills and extreme exposure to the San Francisco Bay. The Hunters Point community lacked public transportation to downtown San Francisco. In the late 1930s, the tightly knit group of citizens began to band together in the hope of improving transportation and other neighborhood conditions.

The sense of isolation created by geography and relative underdevelopment gave rise to the Hunters Point Improvement Association. Formed in 1939, the association sought to develop the district and to connect it to greater San Francisco, while offering access to the benefits of community living. Primary among the association's goals were improved transportation lines (specifically the completion and paving of Innes Avenue), the grading of streets, and the installation of underground sanitation systems in several sections of the district (*San Francisco Chronicle*, 15 Apr. 1939). Led by its president, local resident Lynn P. Hockensmith, the association tried to secure funds and attention from City government. Despite the success of organizing more than 50 residents, the group's pleas precipitated little action from Depression-beleaguered civic leaders. Funds for improvement had to wait until the realities of war demanded improvements in the infrastructure, but the association did effectively make its needs known to many. The organization lasted well into the 1940s as the district and the shipyard began to assume pivotal roles in the war effort.

By 1940, the Hunters Point community had become just that. Herman Lehrbach boasted in the *Chronicle* on December 19, 1940:

Now at this date we can boast of a community: We have industries, we have small business firms, we have potential sites for many more, to say nothing of the unlimited home sites available....To date the district can boast of a large dry dock...several taverns, two stores, two boulevard cafes, a riding academy and several shrimp markets.

A well-publicized and successful venture undertaken by the prewar community had been the establishment in 1939 of a cooperative grocery store. Local resident Chester Winnigsted served as spokesperson for this business venture. It symbolized the community spirit and collective self-reliance of Hunters Point residents in solving their own problems -- qualities in which Hunters Point residents took pride. In this case, the two-mile walk to the nearest store prompted Winnigsted and his friends to form their own grocery store within the district. With five families as original members, the Hunters Point Cooperative Society developed. The

cooperative operated a community-owned store from a member's home (*San Francisco Chronicle*, 18 Nov. 1939). By late 1939, the store was open to everyone in the community, and more than 30 families were members.

These efforts among members of the community to guide the development of their own small district generated only nominal improvement but demonstrate an important fact of Hunters Point life. From early on, the community faced extraordinary battles to gain simple improvements that came easily to other sectors of San Francisco. The 1940 U.S. Census attests that there were then more than 8,000 residents in Hunters Point, 98 percent of whom were White (a population that would diversify dramatically and burgeon to 38,025 by 1950). Despite their observable numbers, for Hunters Point residents, many essential needs were continually ignored.

At the heart of this problem was the outsider's impression of the district. The area tended in those days to be characterized in terms such as: "isolated district," "undeveloped view spots," and "badly in need" (*San Francisco Chronicle*, 15 Apr. 1939). While partially true, this stark depiction represented to many of the residents a distorted view of their district. A resident named Olga Giampaoli, writing as president of the Hunters Point Improvement Association for the *San Francisco Chronicle*, paints a more accurate portrait of her community. She marvels at its scenic beauty and the spirit of cooperation and dedication among its people: "Yet in spite of all this beauty and kindly people, there is one thing that I have never been able to understand, and that is why has a district such as ours been so utterly overlooked by our city fathers?" (*San Francisco Chronicle*, 5 Aug. 1941).

Black migrants to the area did not perceive it as an undeveloped wasteland but as a healthy and successful community:

In the early '40s, here in Bay View-Hunters Point...even prior to the shipyard coming... this was an Italian community. They had two movie houses... a five and dime...streetcars coming up and down Third Street (Jackson, 1995).

A small, comfortable African American community had emerged in and near Hunters Point. Many had called the larger region home, at least temporarily, to work at the depot of the Southern Pacific Railroad located on Third Street and Townsend:

The SP had two overnight trains, all Pullman...between here and Los Angeles. Then there were a lot of commuter trains going out of here...and they had porters on those trains. And they were all Black. Blacks were either porters, cooks, or waiters. And of course the Pullman Company employed a lot of [porters] for the sleeping cars and so a lot of those people

lived over here on our side; they hung out generally around Third and Townsend (Fleming, 1995).

With Hunters Point at one end of their route, some Southern Pacific porters naturally settled permanently near the district. The African American population of San Francisco grew by 131 percent from 1910 to 1930, and an additional 26 percent between 1930 and 1940. (The Black population of Hunters Point continued to grow well after the war, as available housing beckoned newcomers restricted from most other sections of town.) Those who lived in Hunters Point were proud of their lifestyle and self-reliance -- a spirit that fostered community organizing and activism. While attempts made among locals in the late '30s and early '40s to develop and earn respect for the district did not result in significant improvement, they served to mobilize a community spirit.

Prior to the mass migrations of 1941-1945, a transformation was already taking place:

I think there was a Black operated restaurant down there. There was a pool room in that part of town operated by Blacks and you'd see Blacks...on the sidewalk talking to one another...There were a few, not many, but a few (Fleming, 1995).

Events far beyond local control, such as the attack on Pearl Harbor and America's entry into World War II, would bring change to the community literally overnight. It grew from 8,000 Italians, Maltese, and Chinese residents in 1940 to a vastly more ethnically mixed community of more than 20,000 by 1945.

The War Years

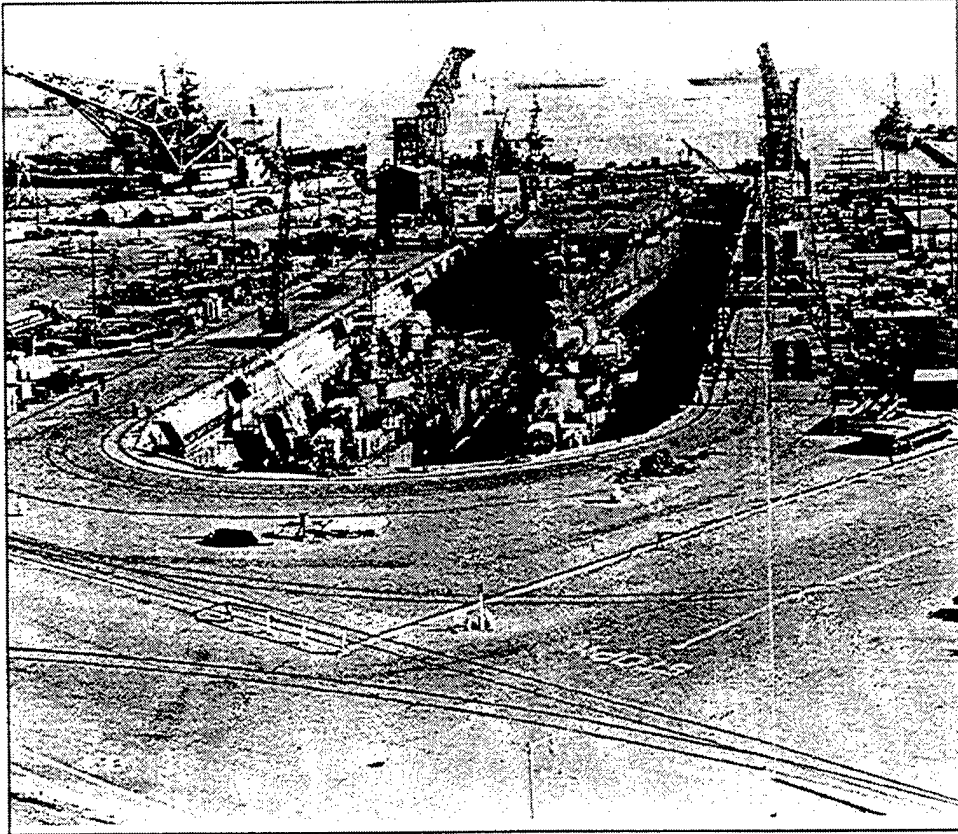
A Community Transformed

The Hunters Point community, which boasted three dry docks, small shipbuilding firms, taverns, stores, boulevard cafes, and shrimp markets in 1940, was transformed into a vital contributor to the war industry in the years following Pearl Harbor. The U.S. Navy's acquisition in 1940 of the Bethlehem Steel Dry Docks, which became Hunters Point Naval Shipyard, necessitated development of the district's infrastructure and the base itself.

Photograph 1 shows Dry Dock No. 4, an impressive ship repair facility and magnet of much media attention. The maritime traffic caused by the war can be seen in the background.

The paving of roads and the completion of sewer lines for which the community had fought fiercely in the prior decade were completed in the spring of 1941 (*San Francisco Chronicle*, 13 Mar. 1941). In addition, a bus line and cable car began service closer to the hills. Between 1939 and 1946, the Navy invested \$87 million at the Hunters Point Naval Shipyard, including the completion of vast public works and ship building. Sixty buildings were constructed, 199 ships repaired, and over 12,000 units of housing built. Heavy construction to support six dry docks also occurred at Hunters Point. The most profound transformations, however, took the form of demographic changes brought on by the war's labor demands.

Faced with nationwide wartime labor shortages, the fully operating shipyard offered many opportunities for skilled and semi-skilled craftsmen, manual laborers, and apprentice blacksmiths, joiners, painters, coppersmiths, electricians, machinists, pipefitters, shipfitters, boilermakers, welders, and sheetmetal workers. In the early 1940s, California's booming war industries acted as a beacon for workers from all over the nation. Active recruitment was conducted to meet the demand. Federally funded relocation programs, under such auspices as the War Manpower Commission, recruited 15,000 to 16,000 Black workers to the Bay Area shipyards by 1943. In a mere three years, the number of Black families in San Francisco swelled from 2,000 to 12,000. The Hunters Point Naval Shipyard labor force swelled from 8,024 in 1943 to 18,235 in August 1945.



Wartime censorship lifted, the Navy today revealed the secrets of one of its largest installations, the HP repair yard which has been constantly enlarged since Pearl Harbor. The picture above shows Drydock No. 4, the world's largest and capable of handling any ship afloat including our new 45,000 ton super battleships.

Courtesy of the San Francisco History Room, San Francisco Main Library.

News spread by word of mouth across the Depression-strapped country. It became known that California and the Bay Area offered consistent work that could be easily secured. And the workers came:

They were brought from the South and the Midwest; from all the gas stations that had mechanics to the machinists who were making farm implements...[they] were brought into the war effort by train into San Francisco. They were promised at the time jobs for any family members that qualified, and the family [was] moved by rail into the area and a house was supplied for them....So the Navy built many homes on top of the hill out here at Hunters Point (Brown, 1995).

Black migrants were influenced by letters and stories of family members, relatives, and friends -- the grapevine that had endured since the antebellum period. They came for jobs and found 4,000 family apartments and 7,500 dormitory units that were supplied by the National Housing Authority. The wartime migration of labor resulted in a major escalation of California's African American population. Because the typical standard of living in the South in the '30s was measurably lower for Blacks than for Whites, the jobs and promising conditions of California provided a strong migratory pull. One resident-businessman who came to San Francisco from Dallas in the '40s recalls that rampant discrimination motivated his westward migration:

I was trying to get away from discrimination....It was just very common for people to treat you like you were dirt, so I wanted to get away... I heard so many wonderful things about California and the East Coast...[So I came to San Francisco.] I thought I'd wait until summer then go to New York, but it took me until summer to get a job. After I...saved up enough money to go to New York, I had fallen in love with San Francisco, so I said to heck with New York (Jordon, 1995).

Tom Fleming, editor of the *Sun Reporter*, the oldest African American newspaper in San Francisco, recalls: "All the war workers were from the South" (Fleming, 1995). And many of those war workers who migrated from the South brought family with them. One African American man from Tennessee followed his brother:

I came to San Francisco....My brother lived over here [in Hunters Point] and he was in the army too...so finally I moved over here to the Hunters Point area. And I've been at Hunters Point ever since (Branner, 1995).

Many of these new Black residents settled close to the jobs, particularly near shipping industry jobs. In the East Bay, they settled in Richmond and Oakland, and in San Francisco at Hunters Point. Like other occupations

requiring both manual and semi-skilled labor, the shipping industry had historically provided African Americans access to financial improvement and skill development. Hunters Point, possessing during World War II one of the three vital shipyards on the West Coast -- and the largest dry docks of the three -- greeted a new community of migrants. The existence of an already settled population of Blacks enhanced the attraction of the district for the wartime newcomers. Furthermore, the presence of the railroad depot meant that migrants from other parts of the country would frequently enter the city through Hunters Point.

The influx of new war workers further transformed fledgling Black communities in Hunters Point and San Francisco:

We could roughly say from about 1942...it really started expanding and it continued expanding until the end of the war (Fleming, 1995).

Lacking entertainment resources in their own neighborhood, Mr. Fleming recalls, Blacks from the community of Hunters Point began to frequent the Western Addition area of San Francisco. By 1945, emblematic of the demographical shift within the community, the first Black entertainment establishment appeared in Hunters Point.

Fleming recalls how Hunters Point grew: "There were only isolated residences out there [before the war], but most of it was commercial" (Fleming, 1995). The war changed the landscape permanently. The most profound physical example of the community's growth came in the form of housing for these new San Franciscans. Karl Kimbrough came to San Francisco in 1943 for both a home and a job at the Naval Shipyard in Hunters Point. He describes the development of housing for war workers in Hunters Point as follows:

They built housing for people to come to work in the shipyard for the Navy. So the Navy rented a space to the Housing Authority to build housing and HUD [U. S. Department of Housing and Urban Development] built housing for the people because there was no place for them to live. The demands of the shipyard at that time, in 1943 to the 1960s, was to bring a lot of people [into] the State of California, to Mare Island and Hunters Point, and they had to have a place for them to live (Kimbrough, 1995).

When the workers came, "they were promised, at the time, the job...and homes were supplied for them" (Brown, 1995). Accordingly, the area was developed with housing complexes built by the Navy and managed by the San Francisco Housing Authority, a 5-member commission formed in 1938 by Mayor Rossi, headed during WWII by executive director, John W.

Beard. (The Authority permanently acquired this housing from the Navy for the city in 1953.) These barrack-style units, built quickly and cheaply, were designed to meet the extraordinary housing demands of those years. They were simple, standardized, and quickly filled. Although built as temporary shelter, most became permanent housing. One later occupant describes the utility of these units:

I hate to use the word typical, but it's a project -- two bedrooms, and when you entered the front door of the house, you stepped into the kitchen, and about ten paces after you stepped out of the kitchen, you are into the family room (Perkins, 1995).

The media took interest in the opening of the new housing projects in 1943: "San Francisco's \$10,000,000 war housing project at Hunters Point was dedicated yesterday...for the use of the community's war-swollen population" (*San Francisco Chronicle*, 25 Oct. 1943). It was the first of many housing projects erected in the ensuing years. By 1945, the Housing Authority, landlord to all the new tenants, oversaw 12,233 home units for the civilian workers flooding into the shipyard. By the end of the war, 300 additional units previously occupied by Navy personnel were also transferred to civilian use (*San Francisco Chronicle*, 1 Nov. 1945). Affordable and well-located, priority for this housing was given to the dry dock workers.

The development in these years was wholly determined by wartime necessity. As new workers flooded into Hunters Point, the area developed to meet the needs of the new population. It was a booming shipyard town. Residents recall that one of the effects of this quick development was a close-knit town: "Everybody knew everybody that worked on the yard; that lived in the area" (Kimbrough, 1995). While some of the 18,000 plus workers lived in other parts of the city, most people employed by the shipyard resided in Hunters Point. This functional relationship meant that citizens would not only work together, but also live together. Echoing Kimbrough's sentiments, resident and activist Espanola Jackson observes, simply, "The community was a family. Everybody knew everybody" (Jackson, 1995).

The Union Struggle

While nearly one-third of the new shipyard workers were African American, and the total African American Bay Area shipyard workforce had grown from 56 in 1940 to 16,000 in 1943, segregation persisted in employment for Hunters Point minorities. Of the 100 leading San Francisco industries, half employed no Black workers in 1944; 90 percent of Black workers were employed by 10 percent of the industries (Broussard, 150). These familiar economic realities were reflected in the composition of Bay Area shipyard unions, too.

The leading union representing a majority of California's shipyard employees at this time was the International Brotherhood of Boilermakers, Iron Shipbuilders and Helpers of America. Commonly known as the Boilermakers, this union represented 65 to 70 percent of West Coast shipyard workers, and its national membership grew from 28,609 in 1938 to 352,000 in 1943. It also rose to prominence within the Hunters Point Shipyard. Notorious for their power and influence by the 1940s, the Boilermakers refused to allow Black membership.

Tom Fleming and others tried their best to bring the employment monopoly to light:

Old Jim Crow was present all the time. You had to investigate that all the time. I was working very closely with the NAACP investigating those things because we were trying to break the stranglehold that the Boilermakers had on jobs in war industries. The Boilermakers looked like they controlled most of the jobs pertaining to shipbuilding (Fleming, 1995).

Without union membership, many positions beyond manual labor became difficult for African Americans to secure. While President Roosevelt's 1941 Executive Order creating the Fair Employment Practices Commission sought to undo these restrictions, the unions found ways to circumvent fair practices. The jobs were advertised as open to all, but, as one Hunters Point local recalls, "when you went to the union [to get a membership card], you found out, no dice" (Fleming, 1995). The situation limited Black employment across the board: "[Blacks] couldn't get in the unions and San Francisco is a union town. That speaks for itself" (Kimbrough, 1995).

Hunters Point workers found a somewhat successful way around union exclusion. They organized themselves into in-yard unions, with the expressed support of the Navy. Karl Kimbrough was a Black member of the local electricians union, the IBEW Local 6 in San Francisco. He and other workers from within and without the other 11 unions represented in the shipyard formed the first Metal Trades Council:

We were very successful in coming up with our unions inside the yard. This is one of the things that the Navy was not opposed to. When we reported to the shipyard commander [then Capt. W. L. Rawlings] what our intentions were they said, "Go for it." We had 48 percent Afro-Americans and we had Asians...Between all of them we had quite a few minorities. This way, they could become members of the union--legitimate members of the union (Kimbrough, 1995).

By organizing workers on site, Black Hunters Point workers bypassed outside union resistance and assured appropriate minority representation throughout the shipyard. Espanola Jackson describes the strong heritage of unionism in Hunters Point:

This was a union town....I've never been in the union, but my mother was in the union, my father was in the union, all the people that came here...[were] union people, and they stuck together and made sure that they would work for the labor that they sweat for and be paid for it (Jackson, 1995).

Many historical analysts express a less sanguine view of the effect of the auxiliary shipyard unions. Generally relegated to inferior status, these so-called Jim Crow or auxiliary unions which evolved because of de jure segregation, carried numerous disadvantages. Not only were they denied voting privileges and many other benefits of normal union membership, but they could also be dissolved by the parent local at any time. Desegregated only months before the end of the war, the Boilermakers were powerless to prevent postwar layoffs that contributed to 15 percent unemployment among Blacks by 1948 (Broussard, p. 165).

Conclusion

Nonetheless, the employment created by World War II, which drew workers to the shipyard, and the affordable housing created to shelter those workers, combined to foster conditions that elevated the status of Hunters Point to a full-fledged community within San Francisco. The availability of shipyard employment for many thousands of Southern Blacks also created the first sizeable African American community within San Francisco's borders.

From 1940 to 1945, the African American population of San Francisco increased by 665.8 percent; from 1940 to 1950 by 904 percent, with a total in 1950 of 43,460 Black residents. According to the U. S. Census, the African American population of Hunters Point alone grew to 25 percent of the total Hunters Point population in 1950, to over 52 percent in 1960, and to over 79 percent in 1970.

Fleeing the racial and economic segregation of the South, many Blacks saw California and the war labor market as a chance for personal improvement. The movement of African Americans from the South to San Francisco continued long after the war ended:

Although some discrimination continued in employment, housing, and public accommodations, the Black migrants' wartime status in San Francisco was a marked improvement over that of Blacks who had remained in the South. Small wonder that the majority of Black migrants remained in the San Francisco Bay Area after the war. For the first time in the city's

history, white San Franciscans would have to adjust to a large Black community (Broussard, 142).

One woman recounts the slow but steady migration of her family from Alabama to San Francisco:

My father's first cousin came out in the '40s, then my dad came out in the early '50s.... Then in 1955, my brother, my sister and I came. Then a couple years later my other brother and sister came [with] my mother" (Tatum, 1995).

Problems arose, however, and persisted for decades. These difficulties were in some ways a continuation of the isolation and limited transportation that marred life in earlier decades in Hunters Point. But these problems were exacerbated when African Americans became a majority among the Hunters Point residents. The community that was quickly molded during the war years and dependent on a war economy, was constrained by the end of the war. These problems are examined in the following section of this report.

The Postwar Period

The Shipyard During the Cold War

The end of the war in 1945 did not signal the end of the shipyard. Although the employment level dropped from its peak of 18,235 to 6,000 by 1949, employment levels remained relatively high as the Cold War transformed the yard for a peace-time military. With the Korean and Vietnam Wars and peak periods of peace-time development, work occasionally grew heavy.

Daily operations of the yard offered economic opportunities for nearly everyone who had received training:

That's why the shipyard was so valuable...You had shipfitters, you needed welders, you needed sheetmetal workers, you needed boilermakers, you needed painters, pipefitters, electrical and electronics, and you needed quite a few machinists (Kimbrough, 1995).

With employment opportunities for temporary and more permanent craftsmen, the community continued to grow.

By news accounts of the day, by 1945, Hunters Point had a residential population of 20,000, of which a third were Black, although the U.S. Census give a 1950 population of 38,035, of which Blacks measure 25 percent.

During these postwar years, the shipyard also expanded its range of services from ship salvage to other kinds of ship repair. In 1948, the shipyard performed \$31 million in ship repair. Since the size and capacity of the dry docks at Hunters Point were the largest on the West Coast, the shipyard was given responsibility for most of the work on ships and non-nuclear submarines. While the Mare Island facilities, handling most of the nuclear capable fleet, likewise achieved prominence, a strong "radioactive tradition" at the Hunters Point Shipyard dates to as early as 1945. Just prior to the end of the war in the Pacific, in July 1945, the first atomic bomb to be used in war -- called the "Fat Man" -- came through the shipyard to meet its transportation to the bomber Enola Gay, then stationed near Japan (Brown, 1995). Hunters Point nuclear readiness was supported by a separately functioning radioactive research lab located on the shipyard's grounds. Commonly known as the "Rad Lab," the U.S. Naval Radiological Defense Laboratory signaled the postwar advancement of the shipyard.

This was no assurance that the shipyard would remain functional. With 6,000 families occupying Hunters Point housing in 1948, and even with \$31 million in ship repair, the first base closure scare came in 1949 when the federal government recommended the closing of the Hunters Point shipyard. At that time, the shipyard employed 6,000 civilian workers in addition to 4,000 to 6,500 Navy personnel. All tolled, the yard payroll in that year was estimated at \$22,500,000 (*San Francisco Chronicle*, 7 Dec. 1949). Karl Kimbrough remembers the 1949 alarm:

That was a fight between shipyards. That was between Hunters Point Naval Shipyard and Mare Island Naval Shipyard. Mare Island says that if Hunters Point continued on they would be taking over, but then [Mare Island] became nuclear and that's what saved them.

The City of San Francisco and the press joined the locals in the battle to keep Hunters Point open. As Kimbrough recalls, "As long as Hunters Point stayed open, the community was totally involved." The employment benefits to the city as a whole, represented by the permanent fixtures of the yard and the journeymen craftsmen who found temporary employment there, catalyzed all City leaders into protesting the closing. After City delegations were sent to Washington, rallies were held by the workers on the yard, union outcries of patriotism were voiced (*San Francisco Chronicle*, 13 Dec. 1949) and support was given from the entire Board of Supervisors, the government finally agreed to maintain the shipyard. The shipyard -- a vital component of the City's industrial base -- was of vital interest beyond the borders of the Hunters Point community.

The New Postwar Community

The presence of Black workers in the shipping and rail industry made Hunters Point an amenable home for many Black newcomers. As Blacks ventured into other parts of the city, however, they found the city was very segregated and met with resistance and restrictive housing codes and deeds. The Housing Authority therefore made an effort to offer much of the available project housing in the hills to Blacks.

Jessie Banks came from Louisiana to San Francisco as a result of the war and to Hunters Point because of the housing:

Black people were having a hard time trying to get somewhere to stay, so the City decided to open [the projects] up and let the Black people come in there and live. So they sent word around where you were living that you can come to Hunters Point and that's where you can have plenty of room and opportunities (Banks, 1995).

As the wartime workers migrated out of Hunters Point or permanently settled in its single-family homes, new Black migrants kept the Hunters Point projects filled. In a city where many structures dated to the turn of the century, this new and affordable housing was a welcomed addition. When new, the project housing facilities on the scenic Hunters Point hillsides were regarded as attractive to many residents. Carol Tatum remembers the projects she occupied:

Most people had a view, particularly up on that hill. There is almost a view from every angle....Everything was clean. It was well-tended by the San Francisco Housing Authority at that time. They had yard people that went around and cleaned up. There was no garbage outside...There was no graffiti. That was just unheard of. So it was a well-tended place (Tatum, 1995).

Not all newcomers to the area, however, were living in such well-tended housing. Carol Tatum also remembers the projects built to meet the initial war boom. While still standing, they were no longer occupied by Navy families. This "Army...barrack-type housing...had been evacuated by... [Navy] people and that was used for mainly African Americans who migrated from the South to work" (Tatum, 1995).

Espanola Jackson describes the housing into which she and her family moved in the late 1940s:

During that time we did have electric lights, but we didn't have ice boxes, so the iceman came....And a lot of people had to make boxes and put them in their windows at night so the food wouldn't spoil....I don't believe that full electricity came in

where you could have a washer or dryer until the '50s and '60s, but [in] the '40s you just did not have that (Jackson, 1995).

Another Hunters Point resident, Steve Arcelona, distinguishes between the condition of the new project housing and the old. "These were the older projects, the ones that were used during the war. I mean they were really the cracker box things" (Arcelona, 1995).

The disparity among the different projects encouraged many to move from project to project. Ira Crooney came to the projects in the early postwar period. While he and his family moved, he recalls, they never moved far:

We moved from one [project] to another. Whenever we'd find something better, we'd move to that one. But we still stayed around here on the Hunters Point hill (Crooney, 1995).

Most of the people coming to Hunters Point were both from the South and Black. Then a child, Lavone King recalls: "I thought everybody came from Alabama and Texas...and Tennessee" (King, 1995). This rise in the Southern Black population created a community much like the close-knit one that had preceded it.

Espanola Jackson and her family came in the 1940s from Texas to what seemed to her a transplanted Southern commune:

During this particular time, everybody helped each other. It was like a village, like in Texas and the South, when if you run out of something you could always go next door and get a cup of sugar, go to another door, get a cup of flour. You didn't want to get everything from one neighbor. So you'd just go all around and you could have a meal (Jackson, 1995).

Lavone King remembers learning to cook at the home of a neighbor, a mother of eight who dressed her hair for her graduation: "It was a very homey feeling. I felt very wonderful in that community" (King, 1995). This may reflect not only the form of community closeness that had prevailed in the prewar years, but a very persistent Southern quality as well.

The strong sense of community in postwar Hunters Point was reflected in its public celebrations as well. June 19, known as "Juneteenth Day," commemorates emancipation in Texas. Due to the distance between Washington D.C. and Texas, word of emancipation did not reach Texan Blacks until June 19, much later than other slaves. To the many new Black arrivals from Texas, "Juneteenth" became a time for celebration at Hunters Point as well:

[It] was celebrated by everyone; cooking, barbecuing, and just coming together and talking about the old times and doing little play things with the children. We would watch the old folks pick the guitar, and they would just enjoy themselves. It was just a day of being together and being a family with everyone" (Jackson, 1995).

Despite the growing African American population in Hunters Point, this was a diverse community. In the housing project Jessie Banks occupied, "there [were] soldiers, civilians, Navy personnel, a whole mix. 'Cause see--the Whites and the Blacks...their job was to work at this shipyard and that's why they had them there" (Banks, 1995).

In Photograph 2, a diverse group of men enjoy free time on the shipyard. Work brought all of Hunters Point's people together.

Housing Highs and Woes

One of the persistent problems plaguing the community in the postwar period was the battle between the residents and the San Francisco Housing Authority, landlord to more than 12,000 residents. While the newer projects were well maintained, older buildings, originally built only to survive the war, were not. By the mid-1950s, the community believed that it needed more than these aged, shabby barracks. The first challenge to the Housing Authority came in 1954.

That year Gene K. Walker and other community project dwellers organized the Hunters Point Project Committee to try to achieve improvements in their neighborhood (*San Francisco Chronicle*, 20 May 1954). Developed quickly and unconventionally, Hunters Point lacked many of the standard amenities of community living that were funded elsewhere. It was an area of dense housing without adequate transportation, recreation, or aesthetic appeal.

The Hunters Point Project Committee felt that the City, profiting from project rents, owed the community the same sorts of resources enjoyed in other segments of town. The Project Committee's goal was to obtain \$12,000 from the City to redevelop the community's theater as a recreation department.

In response to the demands of the Project Committee, the Housing Authority announced plans to release a former Army gymnasium for use by the community. A place to play basketball during the afternoon was far less than the community needed. Project Committee President Walker responded: "[We] favor a neighborhood community center for the entire family, not just a tennis-shoe gymnasium for part-time play" (*San Francisco Chronicle*, 28 May 1954).

The conflict revolved around more than the quest for recreation. At stake was community respect. The Project Committee believed that the Housing Authority lacked the right to dictate which social services the district would enjoy and appealed to the Mayor's office. The Committee obtained the services of a nationally known social worker, Margaret Berry, to determine their needs and sought the respect other districts in town were paid. By the end of the year, however, the former military gymnasium remained the sole public amenity in the area. City government, unwilling to compel the Authority to act, denied the request for funds.

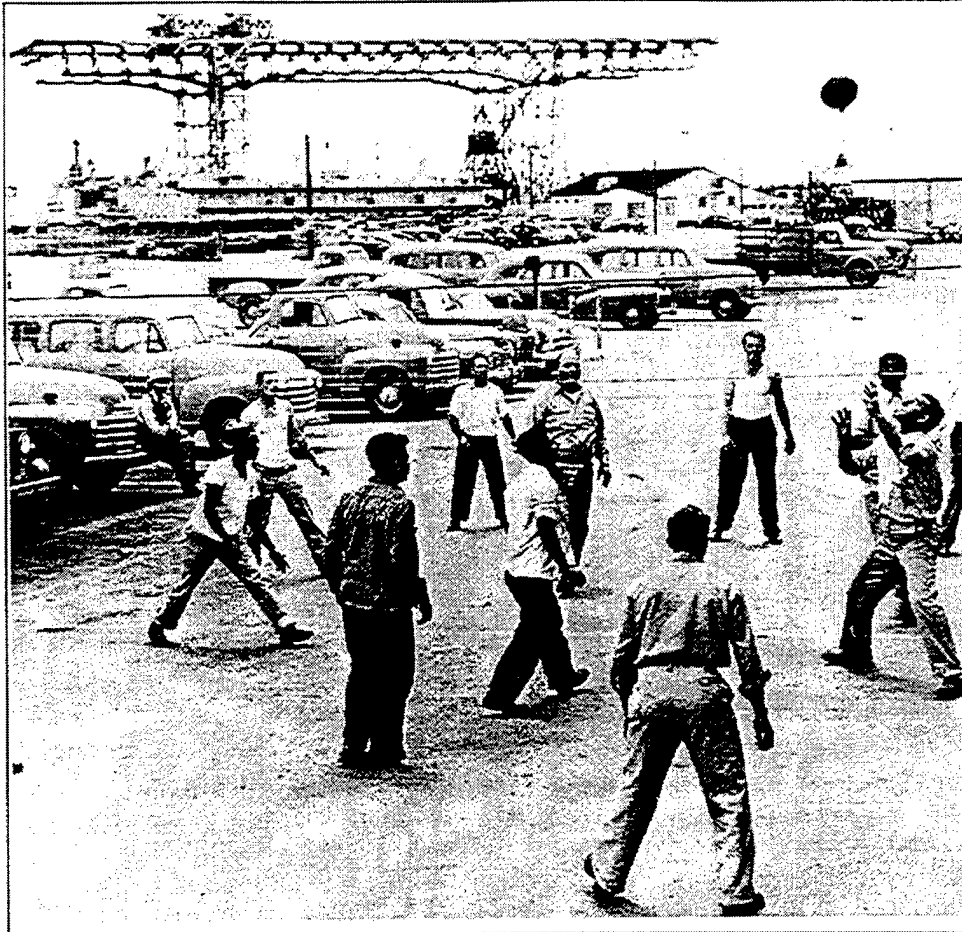
This effort among the populace of the hills of Hunters Point coincided with increasing residential development of the lower (Bayview) area -- the community around Third Street. Although single-family residences were not uncommon in this section before the war, the wartime housing boom prompted further development along Third Street. Karl Kimbrough moved into a home in this developing section in 1943. After the war, primarily in the 1950s, noticeable growth in the housing stock occurred.

Steve Arcelona, current president of the Private Industry Council and an early Hunters Point resident, moved with his family in 1953 to a house that had been moved from another area of the city to the lower Hunters Point area. They found themselves in an area slated for serious change: "There were a lot of empty lots. The projects were right above us," Arcelona remembers. "Then there were the slaughterhouses and the auto wreckers and there was also a lot of fishing going on there" (Arcelona, 1995). It was an area commonly known as Butcher Town, with light industry and five slaughterhouses. Arcelona recalls that on hot days "the stench from the slaughterhouses was something that was part of living in the Hunters Point-Bayview area" (Arcelona, 1995).

The character of Butcher Town, however, was quickly changing with the addition of the Arcelona home and other private homes. In time, only the name and faint smells remained as evidence that slaughterhouses once dominated the area. Sam Jordon, a local businessman and resident, remembers that by the early '60s "community pressure" had forced the slaughterhouses to leave (Jordon, 1995). The district was becoming increasingly residential. "It was exciting...to watch all the empty lots get developed. All of a sudden, it was like the area started getting developed" (Arcelona, 1995).

Both Tom Fleming and Espanola Jackson observe that Butcher Town, as it had originally been, started to fade in the '40s. Tom Fleming states:

[After the war], Butcher Town was just about gone then because they had all those emergency housing [units] they put up for the war workers.....Some of the people were very progressive.



After lunch — It's either volleyball, softball or baseball for many of their workmen after they finish eating lunch and before the whistle blows that sends them back to their jobs aboard ship or in one of the many shops. In background is the dominating world's largest crane, big enough to lift battleship turrets.

Courtesy of the San Francisco History Room, San Francisco Main Library.

They bought... private homes over there in Butcher Town (Fleming, 1995).

Jackson states that the influx of Black war workers forced the departure of the Italian community that had populated Butcher Town:

[T]hen in the '40s Black people started buying homes in this area. As Blacks would buy homes, they would call it 'blockbusting' in the '40s and '50s -- to get the Italians out of the community....The house that I owned [had been occupied by] an old Italian couple that had retired. They moved out, so this area became mostly Black people (Jackson, 1995).

The development of this second area offered many in the projects and elsewhere in the city chances for residential mobility. Jessie Banks explains:

They said we could move out here and they was going to build schools out here, they was going to build swimming pools, they was going to do all this. I said, "Hell, that's the place for me." And we were going to be able to get brand new homes, get them cheap and everything. I said, "I'm going out there to Hunters Point..."(Banks, 1995).

Even today, many in Hunters Point regard the level of home ownership as one of the district's primary distinctions. Ownership helped create a diversified and settled population in the community, in contrast to the more transitory nature of project residence:

[T]his community has 52 percent homeowners and most of those are Black people. We don't buy, speculate, and move and rent. We are stationary. So this community is built on mostly people from Texas and Louisiana (Jackson, 1995).

Postwar Businesses Come to Hunters Point

Accompanying this residential upsurge and the flow of workers into the shipyard via Third Street was the development of small businesses. Steve Arcelona, whose family moved to the area in the early 1950s, describes the Third Street corridor:

...[V]ery alive. There were a couple of grocery stores -- all of them seemingly doing well. There were a couple of drug stores. There were, I think, a couple of high-end liquor stores, a dry cleaners. All of it in that corridor (Arcelona, 1995).

Sam Jordon opened his own business in the Third Street corridor in 1958. Although he was "never...a drinker," he opened a bar to better serve the Black community of the area. "[There were] so few places people could go to get a drink," he recalls. "The few bars out here weren't for Black folk" (Jordon, 1995). Jordon's bar, which later expanded into a catering service, epitomized the ideal of successful local business ownership.

There was also a growing recognition, however, that Blacks in the community were not adequately engaged by local business institutions. Omer Mixon came to the area in the 1940s and remembers racial prejudice; instead of walking into a bar with his Mexican friend, Mixon recalls:

My buddy went on over there and was there waiting for me.
Now I done been in there before. But we went in together. But
this time I'm coming in after him. I sit down and order a beer
and [they tell me] they don't serve Blacks in here (Mixon, 1995).

Only businesses like Sam Jordon's bar provided local social opportunities for the Black community within Hunters Point. Growing up in the community during this period, Espanola Jackson and her friends frequently had to leave Hunters Point for recreation: "You had to go all the way over to Fillmore, what we call now Western Addition." This movement between the Fillmore and Hunters Point was common in those days among the Black community. Jackson continues, "[B]ecause most Blacks that left the Fillmore moved here to Hunters Point, so then we always went back to Fillmore" (Jackson, 1995).

As the slaughterhouses left Hunters Point, other small businesses began coming into the area. Sam Jordon recalls a furniture store, shoe store, and jewelry store in the vicinity of his bar. Al Perkins remembers that there were also social groups that ran clubs. Steve Arcelona frequented a theater popular with kids and a very successful auto wrecking shop. Third Street was the ideal location for most of these small ventures because it also acted as the main thoroughfare for shipyard workers entering and leaving the area.

Very little useful commerce was developing on the hill, however, nor were the basic commercial needs of the community being met by Third Street businesses. Business development in Hunters Point at that time tended to cater more to the worker who traveled through the area than to the permanent resident. "Everything was on Third Street -- what little they had" (Womack, 1995). That little did not include affordable food shopping. Small grocery stores with exorbitant prices were the norm. Lavone King recalls a friend alerting her and her neighbors:

We'd go to the same grocery store that was overpriced. We had
no knowledge of that. She made us aware and stirred up our

pure minds. We were just kind of buying diapers and getting formula and cooking dinner for our husbands... (King, 1995).

Pat Womack, an early resident in the projects, remembers, "We had to go to Mission and shop. We had to go downtown or crosstown because there weren't shopping centers down there" (Womack, 1995). In addition to inadequate local commerce, the problem of poor transportation continued to frustrate the Hunters Point community. Many residents at that time recall how difficult it was for them to get around the area to conduct business. Pat Womack states, "When I first came [to Hunters Point] I liked the area [but] I didn't like the inconvenience" (Womack, 1995). Steve Arcelona explains, "You probably had to take three buses to get from [Hunters Point] to San Francisco" (Arcelona, 1995).

Lavone King describes how much walking one had to do to get to the stores in the area:

In the area where we were...we had to walk to the store. There was nothing immediate except farther down the hill, on what was called Hilltop, there was a supermarket, and then that closed down....And then we had to walk down the hill toward the shipyard to get to the stores that were in that area (King, 1995).

Poor transportation services affected not only shopping and daily business activities in Hunters Point, but also children who went to school. Carol Tatum describes how her only mode of transportation was the public bus: "You had bus fare. I mean, you had to have it because you had to go to school on the bus. And they didn't have bus tickets....The schools were too far to walk" (Tatum, 1995). Other school children could only reach their schools by taxicab.

Photograph 3 shows a cab the Board of Education rented to transport children. Inadequate transportation was a problem for both young and old in Hunters Point.

By the late 1950s, the community's past successes began to fade. Such achievements as the creation of a local affordable grocery co-op had been the means by which the community fended for themselves, but they eventually failed: "Oh, yes, there was a supermarket on Third and Powell called Co-Op...but eventually that type of store closed down, no money" (Perkins, 1995).

Conclusion

Two elements characterized Hunters Point in the years following the war: One was the continued importance of the shipyard in employing Hunters Point residents, which generated a continuous flow of new residents.

Affordable housing and established community further enhanced the attraction of the district for newcomers to the city. The second element, rooted in the past, was the transportation and commerce shortfall. In the next decade, those problems dominated the landscape of Hunters Point.



Youngsters who live on Hunters Point are taken to and from Irving M. Scott School by taxis hired by Board of Education. Mr. Fixit thinks a bus line, to serve youngsters and adults, might be a better idea. He hopes readers will write in their opinions.

Courtesy of the San Francisco History Room, San Francisco Main Library.

The Sixties

Many Separate Communities

As the Hunters Point community entered the '60s, disparities among groups living in the district grew. The perception of many in the area was marked by a disparity between Navy personnel and the community at large -- a once symbiotic relationship now described by one outside observer as "antagonistic" (Elton, 1995). For many in the community, despite the employment opportunities the shipyard provided, it was simply a separate place. Lavone King observes, "[F]or me going to the shipyard was like going downtown, like exciting -- oh, I get to go to the shipyard" (King, 1995). Albert Perkins, who moved with his family in 1956 to a housing project built during the war, found that Navy personnel never tried to fit into the community:

Remember, I said I lived in project housing, and there was also project housing for the Navy. There was a fence between the public housing where I lived and the Navy personnel that actually lived on the base, worked for the Navy....A big fence (Perkins, 1995).

Lavone King echoes this sentiment: "They had their own little city within the city" (King, 1995).

Sam Jordon also perceived a distance between the Hunters Point civilian community and the Navy personnel. In his business, he encountered "very few [Navy personnel]. I met a lot of them and they'd been warned about coming out on Third Street. [They] told them, 'Don't go to Hunters Point'" (Jordon, 1995).

Hunters Point was gaining a reputation as a primarily Black and unsafe part of town. As Jordon observes, the crime rate may have been the same as other parts of the city, but, "when a Black person commits a crime it's thought of a little differently than someone else" (Jordon, 1995).

Espanola Jackson notes that the district was supported solely by the community, not by the Navy.

They had jitneys at that time and the sailors would get in on the base and they would go downtown. They did not make a left turn to come into where our area is; they would make a right turn to go downtown. So the Navy was not contributing to the neighborhood. It was the residents that actually lived in this area that was doing the shopping and the buying, and then in the '40s Black people started buying homes in this area (Jackson, 1995).

Carol Tatum recounts, "I never even saw any personnel in uniform on Third Street" (Tatum, 1995).

For others who lived in single-family dwellings off the hill, however, seeing and playing with Navy families was a daily occurrence. Steve Arcelona remembers:

I also recollect some of the kids who went to elementary school with me...were from the Naval Shipyard. These were like kids and families who were from the Naval personnel (Arcelona, 1995).

Omer Mixon lived near some servicemen: "A couple of my neighbors was service guys and they raised up their families next to me" (Mixon, 1995). Omer Mixon also played baseball with both civilians and Naval personnel. For a time in the '50s the Navy actually sponsored his team, but "they didn't fraternize[e] with civilians as much in the '60s....They didn't sponsor anymore. They figured you should be off on your own" (Mixon, 1995).

The amount of contact local civilians had with the Navy undoubtedly varied among individual residents, yet the overwhelming consensus of long-time residents of Hunters Point is that Navy personnel rarely became a visible part of the community after WWII.

Another division within the community, slower in emerging yet present by the end of the 1960s, was between those living on the hill in the projects and those living in the single-family residences. Albert Perkins hints at the separation: "Away from this area [on the hill that was called 'Hunters Point'], three or four blocks away from this area, you get into another area which was predominantly called Bayview." Carol Tatum echoes the distinction: "There's Bayview-Hunters Point. The Bayview part is the part where the people owned the houses. The Hunters Point part is the hill that used to be all public housing" (Tatum, 1995).

Those who lived in the projects on the hill, or Hunters Point, found themselves at a disadvantage because of the inaccessibility of transportation and shopping. Lacking business, single-family homes, and transportation lines, and at a distance from the Third Street corridor, life on the hill developed a sense of separation from the rest of the district. Lavone King comments:

They felt like it was isolated. Like I said, there were no stores around, everything was at a distance. ...[I]f you were in the Western Addition you could walk down the street to the barbershop, you could go to the store; there were things all around you. But it wasn't true in the case of the Hunters Point area (King, 1995).

Sometimes living in the projects could be socially difficult for school children.

Nobody said anything in elementary [school] because we all lived in the projects; we were right there at the school. But when I got in junior high there were children from private housing, and one day somebody said, "Oh, you guys live in the projects." And...the teacher said, "Well, no." He stopped everyone in the class and got everyone's attention and he said, "If you live in a tree that's your home....So don't ever talk about where someone lives" (King, 1995).

For those who lived in the Bayview area down from the hill, the separation was not apparent in the early part of the decade. "A lot of my friends that I went to school with lived in the projects, and it was very mixed" (Arcelona, 1995). As a child, Arcelona, from Bayview, remembered playing on the hills, at friends homes, or in empty parcels of land. Still, the hilltop acquired a different image in the minds of many: "I remember at that time people [there] being poor. As I look back now, I guess I could be considered poor [too]" (Arcelona, 1995).

A Community of Diversity

In the 1950s and 1960s, the community living in single-family dwellings was still very ethnically mixed. Steve Arcelona recalls the diversity of his neighborhood in Bayview: "I do remember the area again being very mixed, especially the owners of the houses -- Mexicans, Filipinos, Chinese, African American, very mixed" (Arcelona, 1995). The community was also very close:

There were always a lot of kids in the neighborhood...It would be something where you would be over at somebody's house and the mother or father would just call out into the street....We'd go over to people's houses and we'd eat together (Arcelona, 1995).

In the Bayview-Hunters Point of the 1950s and 1960s, the youth were frequently engaged in many different activities. "We went to the gym and played basketball and we went to dances and we went to fashion shows. And there was a movie theater on Third Street, so we used to go to the movies. We went to the library a lot" (Tatum, 1995). As a parent, Ira Crooney knew his children could keep busy: "They had all these parks they could go to. They could play [sports], all that stuff. And they had the gymnasium here at the time" (Crooney, 1995). The community also had Camp Fire Girls, Girl Scouts, and Boy Scouts. As the population of young people grew, common social institutions also grew.

Many after-school activities were provided by various community organizations, and these activities greatly affected the lives of young residents like Arcelona:

I remember the "Rec and Park" had a very big presence at my elementary school and the after-school activities were sponsored and run by the "Rec and Park". I was a member of the Cub Scouts....[W]hen I was a teenager [I remember] joining the Teen Club at All Hollows Church and doing activities with them. There was a time when I actually was a member of Cameron House [which] still exists here in Chinatown...Then when I was in junior high and high school I got a job at the grocery store and all of my spare time outside of school...I spent working for the grocery store (Arcelona, 1995).

The children on the streets had their own baseball teams. One street, such as Innes or Hudson, would play against another. A member of the Blue Diamonds of Innes, Arcelona remembers "These were very healthy activities" (Arcelona, 1995). He also remembers contests sponsored by the local five and dime. Al Perkins recalls many afternoon when he would go "up on the hill and play[ing] basketball" (Perkins, 1995). The youth of the community found themselves engaged in very typical activities.

In the 1950s and early 1960s, drugs did not play a large part in the lives of the young people of Hunters Point. As Espanola Jackson states, "[W]e didn't have the drugs then. We only got the drugs in Bayview-Hunters Point in the late '60s and early '70s. And they're coming in stronger" (Jackson, 1995). Another resident, Carol Tatum, corroborates that drugs did not become prevalent in Hunters Point until after the 1966 riots and the 1974 closure of the shipyard:

After the riots the influx of drugs [happened]....It was gradual. I would say over what felt like a ten-year period, from 1966 to 1976, there was a drastic change. By the time the shipyard got ready to close...some of the young people out here got involved in the sale and the use of drugs (Tatum, 1995).

Before the upheaval of the '60s and the unemployment caused by the shipyard's closure, Pat Womack recalls that the Hunters Point community was close-knit: "[P]eople in Hunters Point were large families, caring families, people who migrated with other people which brought other people into the community" (Womack, 1995). The common background and common economic status among local residents fostered a sense of community. Encountering common problems of urban life, the quality of cohesion deepened: "The community has always been close-knit in trying to do what they could for Hunters Point -- to save it, to make it better, to keep jobs in the area...and they're still trying" (Womack, 1995).

Employment Expectations

During the '60s, many in the community still counted on the shipyard for employment. Arcelona remembers that "as I was growing up...my buddies would talk about getting a job in the Naval Shipyard. There was no question that the blue collar trades were still very healthy" (Arcelona, 1995). He recalls that two sons of a shipyard employee, who aspired to work there when they were youths, were hired according to plan straight after high school: "There was just no question that they could get a job there" (Arcelona, 1995).

The disparity of perceptions between residents of the single-family dwellings in Bayview and the projects on the hill is reflected in Al Perkins' view of the shipyard and its relationship to the community:

Truthfully speaking, from what I can see, there was no relationship. The only relationship that one could say was existing was the fact that some people who lived in those projects worked in the shipyard.

He believes the shipyard was primarily an employer for outsiders:

...[W]hen I lived there, there was a tremendous number of people driving from other neighborhoods to go into the shipyard, and very few people from Hunters Point worked on the shipyard (Perkins, 1995).

Pat Womack knew shipyard workers yet recalls that local work was not abundant: "There wasn't that much to do [for work] around Hunters Point" (Womack, 1995). Sam Jordon saw that "there were businesses coming in but they were not benefiting the average person here" (Jordon, 1995). Echoing the differing experiences of Bayview and Hunters Point residents, while Steve Arcelona found employment at the local La Salle grocery store, Al Perkins found his first job a bus-ride away in the Fillmore District. Light industries provided some employment for the Hunters Point area. Women could find employment making toothbrushes, packing seafood, or working in the canning industry (Arcelona, 1995). But work opportunities were declining.

The simple fact was that the number of permanent employees at the shipyard was gradually decreasing. Ira Crooney recounts how the decrease affected employment opportunities for many of the younger people:

Wasn't nobody getting a job but the old-timers. Weren't that many jobs. See, [with] the old-timers they didn't have to train nobody; they got somebody already experienced. And the

experienced workers had all the jobs at that time (Crooney, 1995).

Regardless of the slow downturn, those Hunters Point residents who were able to get on at the shipyard found great opportunity. Many progressed steadily:

It really paid off for the minority workers because they started out as helpers, a lot of them. And then the time went on, they went from helper to mechanics. And then, from mechanics they went on to leading men. That was a supervisor's position. And then from that, we even had a couple of shop heads (Kimbrough, 1995).

The shipyard remained the most visible employer in Hunters Point, but as the Cold War leveled off, even that began to turn. Karl Kimbrough, who was working at the shipyard in the later years, saw a decline in numbers in the workforce after the Korean war. The shipyard went from a Korean War peak of 10,000 to less than 7,500. There was a further decline in those numbers until its closing in 1974.

Photograph 4 shows the excitement present at Hunters Point when the shipyard workers learned the shipyard would remain open. Ten years later, however, the shipyard workers would be unemployed.

A tension developed in the community due to dwindling job opportunities and the hope of work that the shipyard provided. Arcelona describes the glimmer of hope: "To think back about getting a job, right there....To think you could have that light at the end of the tunnel" (Arcelona, 1995).

Churches of Hunters Point

Throughout its history the church has played an undeniably important role in the community. One resident summarizes it, "Hunters Point is church" (Womack, 1995). The advent of church edifices was gradual, partly due to the lack of money and space in the early years. Some early ministers held church services in the storefronts on Third Street and in their homes. Tom Fleming recalls the growth of Black churches:

Some of the more enterprising ministers were probably holding them in their homes...Looked like Whites were moving out, too. Where there had been a White church, they'd buy that and hold their services in that (Fleming, 1995).

Another resident emphasizes the vital community role played by the church in the Hunters Point of the 1960s:



Good News Gets a hats-in-the-air reception here. Workers respond enthusiastically to word that Hunters Point Shipyard will stay open.

Courtesy of the San Francisco History Room, San Francisco Main Library.

The community was pretty much determined by the leadership in the church....so therefore, there was no need for or no requirement for the Navy or anyone else to do anything. People went to church. [There was] no political process, no concern about political process (Perkins, 1995).

The churches of Hunters Point were viewed by many residents as the primary locus of leadership. Karl Kimbrough conducted community outreach efforts for the shipyard in its later years. To find out what was needed, he went directly to the church. He would gather the four or five ministers who were also employees of the yard and would ask, "Well, from your contacts and from your church...find out from them. What do they think would be the most help that the Navy could give?" (Kimbrough, 1995). That the shipyard chaplain led the outreach efforts prior to Kimbrough's community involvement presaged the long-term dedication of the church.

Despite the strong presence of the church in the Hunters Point community, there remain residents who questioned the church's efficacy in community improvement efforts. Some, like Sam Jordon, were disturbed by what they viewed as the hypocrisy of congregants: "[T]hat's where you'll find the biggest hypocrites, in the church....a lot of them drink more whiskey than I sell, that's what I'm saying about hypocrites" (Jordon, 1995).

While acknowledging that the churches had a strong presence, Tom Fleming doubts that they made substantive improvements. For him and others, the chasm between words and deeds fomented skepticism. "[The church leaders] take advantage of their power" (Jordon, 1995).

Ira Crooney suggests that "[The churches] should have done more for the community than they did. They had the power to cut a lot of the stuff that's going on right today. If they work together, they can do it" (Crooney, 1995). Omer Mixon saw cooperation as one key to better community action, but in his view the churches failed in that effort: "We figured at that time the most important part was to get the church[es] to work together, the others to follow. But that's where the breakdown was" (Mixon, 1995).

Ruby Payne has been a member of the Hunters Point Providence Baptist Church since 1969. In her view, shared by many involved in the churches, work was always being done, yet sometimes problems seemed insurmountable:

The Church always had what they call outreach where they would go out into the area and try to talk to the people, and they would go from one corner and try to talk with some of those and then go to another corner and try to talk. But I don't know if it did any good (Payne, 1995).

For the Arcelona family and others, the Catholic Church was the primary institution in their lives. He remembers the priests from St. Paul's of Shipwrecks and All Hallows running schools and youth groups. For him, they represented a "big presence" in the community (Arcelona, 1995). For those affiliated with it, the Catholic Church provided a strong influence. Youth could join church-based groups. Sponsored activities necessitated involvement by Church members. And adults, lacking many other types of institutions, could congregate through the Church.

Until the pivotal year of 1966, the church represented the only agent of substantial organizing and change in the community. This preeminence was not only a function of the community's religious heritage and commitment; it also derived from the crisis of secular community leadership.

The Crisis of Leadership

Aside from the church, most agreed that community leadership -- that is, traditional leadership -- was lacking. Pat Womack identifies a "Big Five" group of "strong Black women who took a stand" (Womack, 1995). Espanola Jackson recognizes the same leadership:

Eloise Westbrook -- she was the big voice in Bayview-Hunters Point. You had Mrs. Julia Colmer, Rosalie Williams, Ms. Freeman, and Oceola Washington. They were the Big Five and I tell people that we was the little bitty ones because we were following them. But Mrs. Westbrook was the woman I admired so (Jackson, 1995).

Eunice Elton, who worked within the community for over 30 years, also recognized Westbrook as a force in the community. She notes, however, that the persistent problem of the community was a "lack of male leadership" (Elton, 1995). This lack was often a problem in itself. "What we're trying to do in this community," Espanola Jackson says, "is push our men out in front" (Jackson, 1995).

Al Perkins saw the same void in the community: "The church was the only place that you heard someone raise a voice....And even those guys were fundamentally weak" (Perkins, 1995). The biggest problem Perkins identifies was a "lack of identity, poor leadership. I'm going to say poor leadership on a political basis, by the church, and truly the inability to come to some type of conclusion to deal with whatever resources the community had" (Perkins, 1995).

Many regarded and still regard Sam Jordon as a leader. His nickname among the residents is "The Mayor of Butcher Town" -- a title with which

he takes issue: "What good is it to be called a leader if you can't get people to do for themselves?" (Jordon, 1995). For Jordon, the crisis was a lack of initiative to maintain and support Black-owned businesses. He tried to be vocal but feels as though "I'm left whistling in the wind." He laments, "To own businesses and support them, I never saw nobody work for that" (Jordon, 1995).

The lack of Black-owned businesses exacerbated the tension of locals at the seeming mercy of outside owners. Sam Jordon did not know the owners of the few businesses that surrounded him. Al Perkins remembers outsiders replacing outsiders: "There were a lot of little small stores run by Chinese or Arabs, who eventually bought out the White people who ran those pricey places" (Perkins, 1995). The void in leadership, especially leadership that encouraged business development and support, permitted economic development in Hunters Point to be led by business concerns beyond the local community.

In 1963, Sam Jordon did make an effort at improving community prospects. That year, he became the first African American to run for City Mayor. His progressive platform reflected the concerns of his community and most Black communities. He ran for a 30-hour work week to increase employment, better law enforcement, an end to police racism, equal representation in government, better schools, and, most importantly, better housing (Jordon, platform paper, 1963). Although he lost, he did bring many of the community's issues to the forefront.

The community's lack of effective leadership left it powerless to surmount the problems that surfaced in the community in the 1960s. Tom Fleming describes the biggest problems as "poor housing facilities and old Jim Crow was always present" (Fleming, 1995). According to Fleming, the housing projects were aged beyond endurance, yet the City had no problem renting them to a population of lower-income Blacks.

Hunters Point locals observed other problems. Al Perkins saw, "No desire. There was no nothing. I mean, the people worked everyday, came home, and that was it" (Perkins, 1995). As if to fill this emptiness, the mid-sixties also saw the birth of early gangs -- however benign by today's standards: "I mean the gangs at that time was at best a knife. Mostly fist fights and, you know, a lot of bluffing" (Perkins, 1955).

As tension was mounting, Bayview resident Steve Arcelona observes,

[T]here came a point when you didn't hang out up on the hill unless you knew where you were going, unless you went up there during certain times of the day....[I remember] a gang of guys coming down from the hill and sort of meeting up with us and a lot of posturing going on and maybe a few punches getting thrown, but that was the extent of it...I never thought

about getting killed. I never thought about drugs (Arcelona, 1995).

Eventually, the situation worsened. By the late '60s, Arcelona remembers, "There came a point where you didn't hang out on the hill [anymore]" (Arcelona, 1995). The transformations within the neighborhood and the rising tensions came to a boiling point in 1966. That year began with increased community activism, saw a deadly community riot, and ended with a resurgence of hope.

1966 and Change

A Community Awakens

In the late 1960s, the will of the Hunters Point community to alter its situation from within resurfaced. In the tide of ideological change sweeping the Bay Area and the African American community nationwide at the time, a renewed activism infected even the youngest members of the district. The most vocal of this activism took the form of the first mass movement against the Housing Authority since the creation of the Hunters Point Improvement Project over a decade earlier.

By the late 60s, the housing units built as temporary wartime shelter from 1943 to 1945 had seriously deteriorated. Roach- and rat-infested, the structures were nearly dilapidated. Tenants, still under the purview of the City's Housing Authority, believed that the situation was not being adequately addressed. The crisis of unemployment and the lack of community improvement increased local dissatisfaction.

The Housing Authority's abrupt eviction in 1966 of 22-year old Ollie Wallace, his 2-year-old daughter, and his wife, for delinquency in paying rent, mobilized the community. Ollie Wallace, an unemployed maintenance worker, became a rallying point for other dissatisfied project dwellers for whom Wallace's plight served as a focus for community problems. As the community rose to Wallace's defense, mass sit-ins and protests against the Housing Authority Board of Directors resulted in the Wallace family being readmitted to their apartment and their furniture returned (*San Francisco Chronicle*, 9 Mar. 1966).

The battle was waged over much more than one family's rights. It galvanized the growing community activism. As witnessed by Wallace himself, quoted by the local press, "I didn't think there was that much unity among the Black men and women at Hunters Point" (*San Francisco Chronicle*, 9 Mar. 1966). Assisted by new community organizations and leaders such as Harold Brooks and his anti-poverty group, the community rallied for better treatment by the Authority and improved housing standards on the hill.

Enthusiasm spread. A mass effort was planned in conjunction with a Housing Authority meeting, where over 30 community members and leaders, having alerted the media, led a demonstration. The crowd shouted at auditors and blocked exits from the building, demanding that a list of complaints be addressed (*San Francisco Chronicle*, 10 Mar. 1966). One Authority commissioner attributed the uproar to the general climate of "living in revolutionary times," but the incident publicized harsh economic realities as well as a general sixties civil rights ethos enveloping the country.

It should be noted that this "ethos" was expressed by the efforts of President Johnson's War on Poverty, which by 1972 had brought \$8.6 million into the Hunters Point community and had created block organizations for each neighborhood, local Economic Opportunity Councils (EOCs), Youth Opportunity Centers -- extensive new federal and local bureaucratic structures. This was accompanied in 1966 by what was measured by some accounts as a 15 to 25 percent unemployment rate among the 90 percent African American Hunters Point community. The Wallace demonstration was also accompanied that year by the NAACP's call for Black Monday in support of Black employment among construction unions. Local social awareness had already resulted in the City of San Francisco's enacting an ordinance prohibiting discrimination among companies and unions doing business with the City, but the restrictive housing covenants that more or less confined the transplanted African American population in WWII to the Hunters Point and Fillmore areas were slow to make way for integration.

The list of community demands was signed by representatives of new community groups. Among these groups were block clubs from each street on the hill, the Hunter's Point Parent Action Group, various ministries, and the regional Economic Opportunity Council. These groups combined to demand jobs, fair rent, improved infrastructure, and full economic and social enfranchisement.

Increasingly, the community was speaking up for itself and demanding to be heard. Most improvements were attributable to this effort. Lavone King recalls that new community leaders rose "from all of the disruptions and individuals raising hell saying, 'We're tired of living like this. You guys are giving all the other parts of the City money, and we get nothing and we want something'" (King, 1995).

Instead of waiting for help from the City, the community took action by using federal War on Poverty monies. A new chapter of the Economic Opportunities Council (EOC) was created under the leadership of Dr. Arthur Coleman, a local physician. "Some of the projects under the EOC included day care, head start, legal assistance, summer youth programs, and a community credit union; all aimed at giving the poor self-determination" (*New Bayview*, 15 Feb. 1990). The EOC and Dr. Coleman became key players in a community striving for change.

In an attempt to train Black youth for jobs, the Youth for Service organization was begun in the same period. As one resident puts it,

Youth for Service was one of those institutions that helped employ young people that otherwise would have been unemployable....They reached out for people who were willing

to come forward and try to make a change in their lives (King, 1995).

Groups like this and Black Men for Action sought to improve the lives of the young in the community while instilling pride in their common ethnic heritage. By 1967, an Afro Pride Festival was held in the community every year (*San Francisco Chronicle*, 19 Oct. 1967).

In yet another instance of self-reliance, the community began the second co-op for affordable grocery shopping in 1965. The Hunters Point Food Cooperative lasted only six years but demonstrated the creativity and dedication of the people in improving their community. The events of 1966 brought an assortment of funds and figures into the struggling community. How they would respond was yet another challenge.

The Riot of 1966

The stage was set for a comprehensive movement by the community to take control of its district. No single event raised public awareness of the district among City and other government officials more than the disturbance that is now known as the "Riot of 1966."

The event began when a young man in the community was shot dead by police at a liquor store. A local recalls:

[A] young man got killed in the Spotlight Liquor Store. They called him 'Frog'....[People were] angry because they felt this young man was killed unjustly. You know, he was somebody that everybody liked, he was a fun kind of young kid that liked to joke around and...they said that he was shot in the back. [People] felt that there was an injustice done in our community (King, 1995).

Tom Fleming, a community member who tried to stop the young people from rioting, also describes what he saw that day:

We went out [on the streets] and the kids were excited as hell, and they were going to burn the damn town down....So we...called Jack Shelley, the mayor, and says, "We think that if you come out here and talk to these young kids this afternoon you might do some good." Well, Shelley refused to come out there....Then about three hours later we heard some kids were breaking out windows of stores down there, turning over cars and setting them on fire....So we went to the Potrero Hill Police Station. That was the command post. [There were] a couple of cars burning across the street from the police station even (Fleming, 1995).

Despite an abundance of detail, disagreement arose in the Hunters Point community about the magnitude of the event and whether it actually constituted a riot. The media made a major issue of the events of September 27, 1966, which many in the community considered overblown. Sam Jordon who was there during the disturbance, states adamantly, "I've never seen a riot" (Jordon, 1995). Tom Fleming attributes much of the sensation to police and media overreaction. There was very little damage around the Hunters Point area, yet the National Guard was called out in fear of a repeat of the events that had occurred in Watts the previous year:

What we did [to protect the kids], we started driving around...If we'd see kids out on the street we'd say, "Get off the streets cause the National Guard is coming!" They'd shoot to kill....No sooner had we said that then here came a jeep....with two guardsmen and a 30-caliber machine gun mounted...(Fleming, 1995).

Whatever did occur, most remember the fear and confusion. For Steve Arcelona, the event underscored the deep depression within the projects, the isolation of the community, and the disenfranchisement of its ethnic residents:

Whatever was happening there [in the projects] was not part of our world [down in Bayview]. The consciousness of what was happening there was not clear. Immediately afterward, "you could see the change...people moving out (Arcelona, 1995).

The community then found itself seemingly embraced by the sympathy of a liberal city: "People started to take notice" (Womack, 1995). What resulted was the most vibrant change and leadership in the community, even transcending the separation between the community and the shipyard. As a result of the riots, federal and City monies came flooding in for various aid programs. "That's where I first saw a lot of people trying to become leaders...who the spokespeople were and how they got to be the spokespeople, what their viewpoints were. You know, those were the things that kind of changed my opinion about the neighborhood" (Perkins, 1995).

After 1966, "Everybody was doing different things...trying to help other people get jobs....I got involved with the Bayview-Hunters Point Affirmative Action Program, the Bayview-Hunters Point Community Health Center, the Bayview Southeast Development Program" (Womack, 1995). Harold Brooks explained to a newspaper reporter that there was "no way to pinpoint any one responsible [for the activism]. What occurred out here are collective activities and concern a great number of people....At the time there was a lot of real community feeling about helping one another to make this work" (*New Bayview*, 22 Feb. 1990).

Amid the renewed drive from within and the influx of federal and local funds into the district, city organizations also began addressing the problems of unemployment in the community. One of these was the Private Industry Council (PIC) under the leadership of Eunice Elton. Elton came to San Francisco in the late '40s and became intensely involved in the Hunters Point community in the '60s. The PIC, funded by the Mayor's office as well as federal monies, began several training programs for youth and adults. While problems persisted, Elton observed that the community "learned how to be heard" (Elton, 1995).

Young and old became new members of diverse organizations. New leaders rose in the community -- Harold Brooks and his anti-poverty group, Adam Rogers and his various young men's employment associations, and Dr. Arthur Coleman. With these new leaders and many others, Hunters Point entered a new period in its history.

Dreams Deferred

Despite all the new activity, results came slowly. The hopes of the community rested on achieving decent housing and jobs for the massively unemployed migrants to the Hunters Point Shipyards, residents from the Fillmore and others seeking refuge from segregation and discrimination. While those hopes translated into good intentions and organizing, fundamental problems continued to plague Hunters Point. The various agencies were unprepared for the task at hand:

It was very interesting. As a result of the riot, the Chamber of Commerce decided to get into the problem and help with the employment problem, and they were so naive. They went out on the radio and said to everybody, saying "Give us your job opening so the young people can be employed." Well, a job opening for a secretary has to be able to do this, this, this, this. The jobs that came in were jobs that nobody in the unemployment group was going to be able to qualify for (Elton, 1995).

Multi-agency programs did attempt to employ the population by offering job training opportunities. These programs often, however, assumed that the economy was open and businesses and government agencies would employ the trained workers. Fundamental issues of access needed to be addressed, "efforts to tackle the total problem rather than just the single problem of job skills" (Elton, 1995).

Pat Womack was active in various community organizations ranging from health care, with Dr. Coleman, to affirmative action concerns in the

workplace. She, too, recognized the limitations of the new federal and municipal assistance:

When you start requesting things that you need in your own area...then they do enough to pacify you....They do enough to quiet you down so you can stop ringing the phone (Womack, 1995).

Tom Fleming likewise observed little real progress: "They started spending money...[but] they didn't reach very many people in the spending program" (Fleming, 1995). From his viewpoint and that of many other residents, the major development was the creation of various administrative posts and the opportunity for community members to head up new organizations. In fact, some estimate that nearly \$6 million of the \$8.6 million spent in Hunters Point anti-poverty programs was devoted to program payroll.

Although neither new leaders, learning how to exert pressure on the City for funds or programs, nor outsiders had practical answers, some benefits were obtained:

The employment efforts have gotten some individual people into jobs, but not as a Hunters Point group, as individuals. We [PIC] have spent a lot of federal money working with funding community agencies to help with the employment problem, and they have had some successes (Elton, 1995).

One of the most vivid successes came in the temporary employment of youth. Yet because federal monies subsidized those work programs, the youth did not gain private sector experience.

The riot brought a new breed of community organizer to leadership in Hunters Point. While their successes were few, a renewed sense of appreciation for the needs of the community inspired them to persist. To prevail in the face of the events that were to follow, that persistence would be essential.

The End of an Era

The Redevelopment Program

Aided by the leaders who arose in the late 1960s, the community of Hunters Point gained prominence in the city's quest for urban renewal. From the late 1960s through the 1970s, efforts were made to rebuild what had become one of the most depressed areas in San Francisco.

One of the most visible symbols of the need for redevelopment was the Hunters Point hill, then covered with hastily constructed, 25-year old housing. The poor housing stock stood in an area lacking in parks and recreation. To remedy this dismal situation, large sums of federal money and new job opportunities came into the district in the form of the Urban Renewal Program.

New construction did present opportunities for minority local employment. One of Pat Womack's jobs was to assure adequate minority representation in some of these efforts. Yet some job discrimination persisted. In early 1970, excitement over development funds was tempered by a recurring problem: One large firm hired to do much of the redevelopment work, while sporting Black bosses and employees, was White-owned (*San Francisco Chronicle*, 10 Apr. 1970). Jessie Banks recalls, "They didn't hire the Black people. They brought in their own crew and started using them." The workers were from "everywhere but Hunters Point" (Banks, 1995).

While Urban Renewal brought cosmetic changes, the situation at its core was not renewed. "[They] put new faces on these barracks, these projects....They look like apartments. But the same people, they moved them over to one side and then they moved them back in. (Perkins, 1995). On the other hand, Tom Fleming believes the biggest change wrought by the renewal effort throughout the city was simply relocation:

We told them that we called it "urban removal" because none of those people came back here to live. They left from over here when they tore down old houses. None of them came back because they moved out of town, a lot of them moved out of San Francisco (Fleming, 1995).

The Navy Steps In

The Navy and the local shipyard played a role in the betterment of the community. Through their outreach efforts in the early '70s, the Navy orchestrated one of the more successful job training efforts at the time. From 1970 until the shipyard's closing, Karl Kimbrough acted as the

community outreach organizer for the yard. One of his major goals was to find out "what the Navy could do for the kids in the summer when they were out of school" (Kimbrough, 1995). Toward that end, and in the hopes of training the youth for future positions in the industry, he helped to develop the Navy's Pre-Apprenticeship Program.

With the help of another employee named Frank Thompson, Kimbrough organized the recruited youth into various shipyard shops. They found summer employment for "girls who could work in the office [and] fellas who could work as assistants to the mechanics in the shops" (Kimbrough, 1995). By training them and offering valuable work experience, this program prepared youth for jobs in any shipyard. In their first year they "brought on about 75 youngsters from the community" (Kimbrough, 1995). At its apex in 1973, the program benefitted 119 young people. Don Brown praises Kimbrough's and the program's efforts: "The program turned out a tremendous number of very, very good employees who knew their trade well because they were trained by the old timers" (Brown, 1995).

The Pre-Apprenticeship Program was interracial and engaged youth from all over the city. An even more focused attempt to benefit the Hunters Point community specifically was accomplished by outreach. This came through Kimbrough's association with the Hunters Point Boys and Girls Club. The clubs were given a donated spot on the hill and a building from which to operate. Kimbrough, one of the Board of Directors of the Club, also saw that they received funding donations. For recreation, they took some of the children out on the Navy's tugboats for weekend rides on the Bay. A close relationship again had developed between the shipyard and the youth of the community.

The Hunters Point young people were not the only ones who benefitted from these efforts. Much was done for adult clubs as well. Kimbrough brought together a diverse collection of church and community social groups for a meeting at the shipyard to "talk about the things they'd like to do," to find out how the Navy could help fulfill their needs (Kimbrough, 1995). He discovered that their main problem was that "they couldn't get out of the community because they didn't have transportation" (Kimbrough, 1995). He arranged for the Navy to provide transportation to various recreational sites in the Bay Area.

In the early part of that decade, after the awareness that grew from the '60s, the shipyard began to exert as vital a role in the community as it had during the war years. "It turned out to be a very successful thing for the community and the shipyard" (Kimbrough, 1995). Unfortunately, the harsh realities of base closure in 1974 ended any hopes of an expanded effort.

The Yard Closes

The closing of the yard meant a loss of employment for 5,060 workers. In an effort to counter this loss, the Navy coordinated a replacement program. The goal was either to find other government opportunities for the skilled craftsmen or to allow them the option of retirement. For those involved, it was primarily a success. "We found jobs for all the workers down to 136" (Kimbrough, 1995). Even if this meant relocating to one of the operating bases in Southern California or Washington State, for those workers it also meant a continuation of employment utilizing their skills.

Some of the local employees, however, chose not to relocate to other bases. They joined the growing ranks of the unemployed in Hunters Point (Brown, 1995). Many also chose to take early retirement, for which many were not financially prepared: "When they closed the shipyard down, a lot of them retired early. They didn't have no money. But if they could have worked on out and had something when they retired, then I think it would have made a difference" (Banks, 1995). The transition was most difficult among the African Americans in Hunters Point and throughout the San Francisco community, half of whom had been employed by the shipyards or government (Broussard, p. 150).

The closing of the shipyard had a much wider impact than the mere loss of a hundred or so jobs. With the closing came the closing of businesses all over the area: "When you start winding down a large facility like Hunters Point Naval Shipyard, it's definitely going to affect business....It's only natural for them to wind down too" (Kimbrough, 1995). Businesses began shutting down as the flow of consumers into already limited commercial zones dried up even further. Espanola Jackson states, "The community died when the shipyard left. There was nothing. Everything that was here disappeared." She describes going-out-of-business sales along the Third Street corridor where goods were being sold at ridiculously low prices. During one store's desperate attempt to close, she purchased a bedroom set for five dollars (Jackson, 1995).

The closure of the Naval Shipyard posed yet another economic hardship for the community. "There was nothing to support business in [Hunters Point, and now] there's not a lot of business to support the population" (Arcelona, 1995). Carol Tatum states that the effects of the closure went deep in the life of the entire Hunters Point community: "[I]t has left a void in my life. The absence of employment opportunity and the impact that that has on the community affects everybody in it and associated with it" (Tatum, 1995).

Depression at the Point

The Yard Transforms Again

The closing of the Naval Shipyard did not mean an end to operations altogether. A company called Triple A leased the property from the Navy between 1975 and 1985. Triple A's contribution to local employment and community activities was limited in comparison to what the Navy's had been: "There just was not the volume of jobs anymore" (Brown, 1995). Furthermore, the jobs that did exist on the yard were no longer filled by locals. "There was no concern at that time with the effort to hire locally" (Brown, 1995). The real opportunities for the community represented by the shipyard existed no longer.

Found guilty of "environmental infractions" and fined for their abuses, Triple A left the shipyard in 1985. The community was then even left out of the efforts to clean up its neighborhood. Jessie Banks recalls,

They say we're going to have jobs out there for years, work out there, cleaning it up. But when it came to hiring they said, "No, they can't work out here because they're not trained, it will kill them." So that meant Black people didn't have anything to do. It was all right for [local people] to stand and watch these big trucks haul this stuff out, but they couldn't use them. It was all right for people [to have] their windows open for it to blow into the house, but they couldn't work. So [the companies] brought in people from everywhere else but Hunters Point (Banks, 1995).

In the years following the Triple A operation, the yard did resume some of its activity on a temporary basis. In this period, both the USS Enterprise and the Carl Vincent were serviced in the dry docks. Members of the community benefitted from this. In a community well aware of the historical problems of shipyard employment, the Navy decided "that the effort will be made to hire locally" (Brown, 1995). In the last job the shipyard completed, more than 20 of the laborers were residents of the hill.

Eventually, the Navy leased out property to various tenants. Most notable is a collection of several hundred artists. They are, some claim, "the largest concentration of artists" in the country (Brown, 1995). Today, they and several other small firms represent the bulk of the yard's occupation.

In the continued effort among the locals to benefit from their local economy, the Aboriginal Black Man's Union, assisted by James Richards, has recently led the fight for fair representation. The successes of employing men from the hill have resulted in the coordination of an

agreement with the Navy. The stipulation to hire locals is now written into the contract under which the Navy currently operates (Brown, 1995).

Beyond the Yard

In the Hunters Point community today, the situation does not seem much improved. "If you look at Hunters Point when I lived there, in the sixties, and you [ask if] the plight of the people changed for the better because of the leadership, the money, the programs...if you look at it now it's even worse. It's absolutely worse" (Perkins, 1995). A resident and activist for the last 20 years, Betsy Blom-Stalinger concludes, "The social quality of our lives in the Bayview-Hunters Point area is more difficult than it ever has been" (Stalinger, 1995).

With the last 50 years of history behind them, the community fights for better treatment in many ways. Espanola Jackson, still active in many of these struggles, observes that they still share the realization "that we have to come together as a group and as people [and ask] 'Well, what about us? What has happened with us?'" (Jackson, 1995).

Conclusion

Hope and opportunity at Hunters Point have fluctuated throughout the years. "It was worse, started to get better, and now it [really] needs to get better" (Womack, 1995). Presently, a wide range of local organizations address the issues and concerns of thousands of residents. Crime, jobs, adequate housing, and many other concerns shared by other San Franciscans citywide occupy their time. Betsy Blom-Stalinger says the people are "demanding equality and demanding equal justice...to give people the same chance that all other people have had for years" (Stalinger, 1995).

Opinions on how to improve the situation are varied. Some see a beginning in revitalizing the shipyard. "I know we need that shipyard open" (Womack, 1995). This view rests on the belief that there are opportunities to be developed locally. Even if the results are not quickly forthcoming, shipyard revitalization will at least "give a sense that there is hope" (Arcelona, 1995). How this happens is just as important: "It has to happen from within. And we have to open up and be willing to share where we came from. For so long we've held back and suppressed [it], because that's not something nice to talk about" (King, 1995).

Whatever the future holds, the community is mindful of its history and anxious to remedy its problems. "There is a strong desire to say, 'You owe the community something.' Whoever goes in [to the shipyard] owes the community something" (Arcelona, 1995). This sentiment is shared: "I think the community as I have seen it feels that they should be able to control

what goes on out there [at the shipyard]. They want to be able to make decisions as to the use of the space" (Elton, 1995). Yet skepticism created by past disappointment endures: "If Blacks are going to be [allowed to] participate in that...I don't know" (Fleming, 1995).

In the last 50 years, Hunters Point has weathered many storms. The residents have continually struggled for ideals of community. At its heart, Hunters Point is that -- a strong community. Pat Womack, who now lives in Oakland but remains connected and dedicated to the Hunters Point community declares, "I've always been in Hunters Point. I came to Hunters Point, I'll always be Hunters Point. When I go there I'm at home" (Womack, 1995).

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